

SD Times

SOFTWARE DEVELOPMENT

The Industry Newspaper for Software Development Managers

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Sun Details OpenSolaris

Creates advisory board to help create structure for project, expected in Q2

BY YVONNE L. LEE
Sun late last month shone light on the licensing of its awaited open-source version of Solaris, to be available in the second quarter, but rules about how the community will work still need to be developed.

A five-member community advisory board will manage the software, which will be called OpenSolaris. Two of the members will be appointed by Sun, and two will be selected from members of the OpenSolaris pilot project, which has

been in place for several months, according to Sun's executive vice president for software, John Loiacono. The fifth also will be appointed by Sun, but will be from the open-source community at large. This group will determine community rules, including how contributions are submitted.

Sun seemingly wants to both open-source Solaris and hand-pick the governing board, said Clay Ryder, executive vice president and chief operating officer

SUN CREATES FIVE NEW SOFTWARE SUITES
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Borland Ready To Deliver On Delivery Vision

First phase of core software platform will include new tools based on roles

BY JENNIFER DEJONG
Building on a plan delineated last September, Borland has said it will deliver the foundation of its software delivery platform in late March.

The company on Feb. 7 was expected to announce Core SDP, its software delivery platform that includes Core Analyst, Core Architect, Core Developer and Core Tester. "This is the first of many deliverables that will



Borland is focusing on the needs of the person doing the work, says Kerpan.

align people, processes and technology to maximize the business value of software," said Pat Kerpan, Borland's chief technology officer. Previously code-named Themis, Core SDP is user-based, not product-based. "We are focused on the needs of the person doing the work, more than the industry has been in the past." He acknowledged that the IBM Software Development Platform, delivered late last year, and Microsoft Visual Studio Team System, expected this summer, also are designed around the concept of role-based computing.

Underlying Core SDP are Borland's existing tools. But the new offering is a "unified infrastructure," not just a platform that loosely integrates Together

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RFID: All Along the Supply Chain

Help coming for developers struggling to get apps on air

BY EDWARD J. CORREIA
Knowingly or not, many people have already experienced radio frequency identification, or RFID. It's used by commuters for automatic toll collection, for contactless building security tags and some charge-and-go systems, to name just a few. But some companies, thrust into a more intimate relationship with the technology through mandates by their trading partners, such as Wal-Mart, are struggling to adapt.

For .NET developers, a new component may offer help. IDAutomation, which develops and markets bar-coding systems for supply-chain management, in January released the RFID component for .NET version

1.0, a DLL that company CEO Brant Anderson said helps to automate the development process for RFID label creation. "It allows you to easily convert data into hexadecimal format, and to encode the RFID tag," both of which, he said, are required by most RFID applications, but which are difficult to do programmatically.

Anderson said that in addition to demand for RFID capabilities from customers of the company's existing bar-code-label software and related products, "the Wal-Mart mandate" played a part in his decision to add the technology to its line. In mid-2003, Wal-Mart, the nation's largest retailer, demanded that 100 of its top

suppliers begin shipping goods to several of its major distribution centers using the radio tags by Jan. 1, 2005.

OVERBLOWN REPORTING
News of the Wal-Mart mandate made headlines for months as suppliers balked and analysts projected costs in the millions of U.S. dollars per vendor. But according to research firm Incucomm, which surveyed the affected companies, the reality was far different.

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SPECIAL REPORT

More Than A Development Environment ...29

Five Years of Tiny Headlines And Important Stories

BY ALAN ZEICHICK
It's been five years since Sun introduced Java 2 Micro Edition and Solaris 8. Five years since Excelon and CSI USA, the New York-based subsidiary of the Italian company Communications Services International, formed an alliance to integrate their XML-based tools.

The half-decade since the first issue of SD Times has seen

a lot of changes within the software development industry. Some of those changes, such as the release of J2ME, have proven to be significant. Others, such as the Excelon/CSI alliance, ended up being less earth-shattering in their importance.

The formation of BZ Media LLC, and the launch of SD Times, came at a precipitous

► continued on page 15

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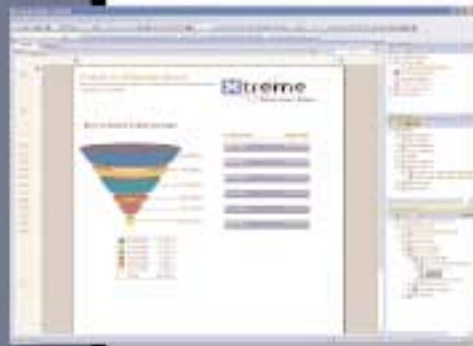
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Linux Leaders: No Vision Needed

BY ALAN ZEICHICK

BURLINGAME, CALIF. — A panel discussion including Linux creator Linus Torvalds and Mozilla chairman Mitch Kapor was the highlight of OSDL Enterprise Linux Summit, a small conference held in early February near San Francisco International Airport.

The panel, which also included Linux lead kernel maintainer Andrew Morton and CollabNet founder Brian Behlendorf, was originally promoted as addressing questions about “the future of the kernel and the OSS/Linux solution stack.” However, the topics posed by session moderator Stuart Cohen, CEO of Open Source Development Labs, and the audience were actually more general, ranging from the role of software patents in the open-source movement to the status of embedded-systems work within Linux.

As he has often done in the past, Torvalds made it clear that he has no particular long-term goals for the Linux kernel. When asked for his five-year vision for



Four open-source luminaries: Linux creator Linus Torvalds, kernel maintainer Andrew Morton, Mozilla chairman Mitch Kapor, and CollabNet founder Brian Behlendorf.

the open-source operating system, he said, “I’m the anti-visionary. I don’t trust people with visions—visions are dangerous.”

Instead of plotting a direction, he focuses on problems affecting everyday users. “I try to avoid even seeing where I want to be in five years; it’s more important to see where I am today, rather than dream about where we’ll be five years from now.”

The open-source panel had an interesting take on the continuing challenges of the SCO lawsuit: that it’s actually helping Linux adoption.

According to Cohen, SCO’s

action, targeting companies such as IBM and AutoZone, “was probably the greatest thing to happen to the acceleration of Linux and open source.” Over the past 18 months, he said, Linux has been under intense scrutiny by the press, and by many lawyers doing due diligence—and “it came through with flying colors.” That has led to increased adoption, he believes, since many of the questions are out in public view, and have been well addressed.

Still, that doesn’t mean that all’s rosy, particularly on the desktop, largely because the different distributions lack the sin-

gle cohesiveness that other operating systems, namely Windows, can offer. While generally supporting the idea that Linux’s lack of a monopoly controller has led to a lot of experimentation, the panel acknowledged that there isn’t a single face of Linux for the general consumer.

Can the community pull together and standardize? Perhaps—but only if there’s a common enemy, believes Kapor. “If the Martians invade, and the only way humanity can save itself is if there’s a great Linux desktop, that could cause people to re-evaluate their priorities,” he laughed, admitting that a lack of

a UI standard is a “fair criticism.”

Another issue for the Linux community remains one of software patents—despite the release of large chunks of patents and code by such companies as IBM and Sun. “We were glad to see IBM make the pledge they did,” said Behlendorf. “We would have been more glad to see Sun make the same pledge, instead of a different pledge, but the idea that companies will make those patents available for the open-source community is great.”

Behlendorf said that Sun’s licenses inhibit some uses of the patents key to the development of commercial projects that use open-source code.

A bigger worry is Microsoft, whose patents Kapor said are akin to having vats of toxic chemicals. “We have to worry about a patent Bhopal,” he said, referring to the ecological disaster in India, if companies continue to use patents in an aggressive way. “The use of patent WMDs [weapons of mass destruction] will be the last stand of Microsoft.” ■

Some Changes in the Security Details

Eclipse, Visual Studio integration for Ounce Labs, rebranding for Coverity

BY JENNIFER DEJONG

Two companies among a growing array of those selling source code analysis tools were expected to update their offerings earlier this month.

Ounce Labs was expected to announce Prexis 3.0, and Coverity was expected to launch Prevent and Extend, an upgraded, rebranded version of its earlier SWAT offering.

New to Prexis 3.0 is integration with Eclipse and Visual Studio, allowing developers who use the tool to scan source code for possible security flaws to “do so in way that doesn’t interrupt the way they work,” said Jack Danahy, CEO of the Waltham, Mass.-based company. Earlier versions of Prexis supported C and C++, but 3.0 adds Java and JSP to the list. It also allows native analysis of code running under Linux, he said. “In the past, to get at those files, you had to link the engine to that OS.”

Prexis, which starts at US\$2,000 per developer, com-

petes with source code analysis offerings from Fortify Software, Secure Software and Watchfire, among others. Coverity positions Prevent and Extend, which analyze the source code of applications written in C and C++, in the broader quality-assurance context, said Seth Hallem, CEO of the San Francisco-based firm. In addition to pinpointing security vulnerabil-

ities a hacker could exploit, they look for other software defects, such as the improper use of a pointer, which could cause a system crash. “It’s important to find as many bugs as possible,” he said. “In the broadest sense, they are all bad things.”

With the launch of Prevent and Extend, priced at US\$100,000 for 1 million lines of code, Coverity essentially has split

its previous SWAT product into two. Prevent analyzes source code for known flaws, such as buffer overruns, while Extend lets development team managers write their own custom checkers, looking for problems unique to their own shops. “Every company has its own dialect,” said Hallem. Extend is based on C++. Its predecessor, Metal, which was included in SWAT, was a propri-

etary programming language, which managers had to master in order to use, Hallem said. New to Prevent is faster performance and a lower false-positive rate, as well as the ability to find null returns and poorly written error code.

Ounce Labs’ Danahy said that as the need for security tools at the application level gains importance, companies that sell them have a responsibility to give the developer a sense of comfort. “We should say, ‘These problems exist inside of code. Everyone has this problem. It’s not an indication that your code is bad.’” ■

Watchfire Web Analysis Platform Gets Security

BY DAVID RUBINSTEIN

Watchfire late last month integrated the application vulnerability testing technology it acquired last year from Sanctum into its WebXM 4.0 Web site analysis platform, marking the first integration of the product lines.

WebXM essentially is a crawling agent that checks Web sites for deficiencies by evaluating applications and content, according to Mike

Weider, founder and CTO of Watchfire.

Weider explained the software is especially useful to organizations with large Web sites—those with 20,000 or more pages that have been developed in a decentralized manner. WebXM customers can choose modules to scan their sites for privacy, regulatory compliance, accessibility, quality and corporate standards. An application security

module is new to this release. “The stakes are being raised in terms of implications of [Web site] failure,” Weider said.

The software, which is priced according to how many modules are chosen and how widely WebXM is deployed in an organization, helps users establish systems for how Web applications are screened. The analysis generated from WebXM can then be integrated back into the development process to ensure

applications meet corporate guidelines, he said.

WebXM is sold as either stand-alone software or as a managed service over the Internet via an annual subscription. Currently, 60 percent of Watchfire’s sales of this product are perpetual software licenses, while 40 percent are subscription, but Weider said the software-as-a-service portion is growing and could surpass licenses soon. ■

IBM Must Hand AIX Code to SCO

Latest ruling expected to delay trial's November start date

BY YVONNE L. LEE

A ruling last month in SCO's breach of contract lawsuit against IBM could result in the trial's being pushed back from

its scheduled Nov. 1 date.

Judge Brooke Wells ruled on Jan. 18 that IBM must hand over all versions of the AIX and Dynix/ptx operating systems,

which IBM claims is more than 2 billion lines of code. SCO had sought the code in an attempt to prove that IBM used SCO's property in the creation

of its operating systems.

Because of the new discovery requirements, the Nov. 1 trial date for the case will probably be pushed back, said SCO

spokesman Blake Stowell. "The handwriting's already on the wall for that," he said.

IBM declined to comment on the ruling.

Discovery is a pretrial phase in a civil suit in which both parties reveal their evidence and supporting information.

SCO also had requested access to IBM's version control systems, Configuration Management Version Control (CMVC) and Revision Control System (RVC), which provide information about what changes were made to the operating systems and by whom, but Judge Wells ruled that SCO be given the program notes, design documents and white papers, but not access to the systems themselves, since they contain information about other projects not related to this case.

IBM also had to hand over documents from top-level officials regarding IBM's use of and strategy behind Linux.

LOSING ARGUMENT

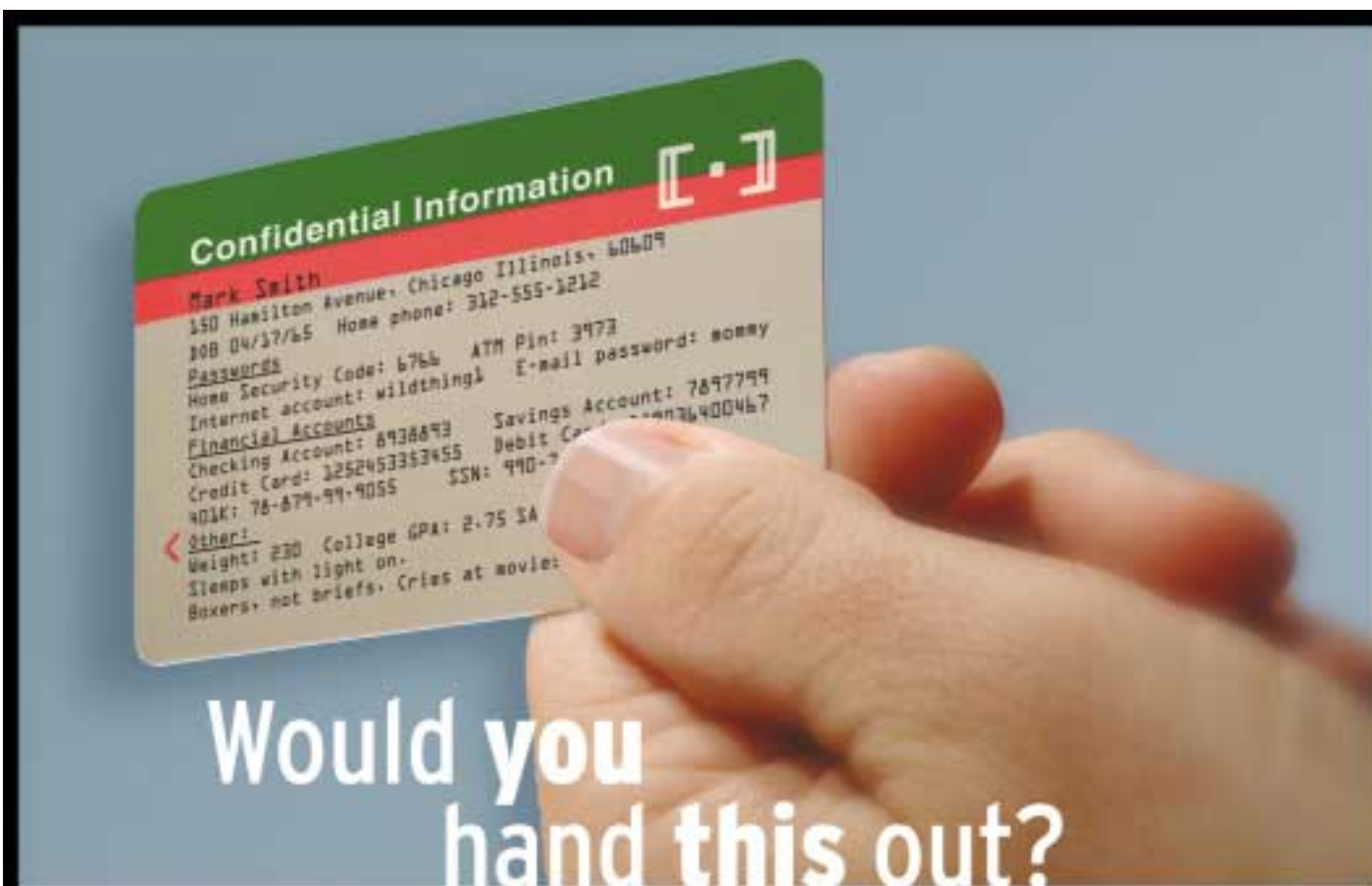
IBM had argued that SCO failed to confer with it before filing the motion to compel, which can be grounds for denial of the motion, but SCO countered that the requested items in that motion had already been requested, therefore conferring was not required.

Judge Wells decided in SCO's favor that given the nature of the previous discovery requests, there was no need for SCO to confer.

"Unfortunately, the court seriously doubts that a meet and confer over the present motion would have resulted in anything more than anemic advancement toward resolving the dispute," she wrote.

SCO had requested contact information for all 7,200 people who had contributed to AIX and Dynix, but Judge Wells instead ordered IBM to provide contact information for the 3,000 individuals who contributed most to AIX and Dynix. IBM must provide all this no later than March 18. In addition, both companies must meet and determine a new proposed schedule no later than March 25.

Still ahead for the two sides are fact and expert discovery deadlines, exchange of proposed jury instructions, a special attorney conference and settlement conference, and a pretrial for filing proposed jury instructions, as well as the trial itself. ■



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ColdFusion Aims to Ease Chronic Web Pains

Release of MX 7 addresses creating Web forms, documents, reports

BY DAVID RUBINSTEIN

With an eye to solving what it calls chronic problems surrounding Web pages and applications, Macromedia released ColdFusion MX 7, the latest version of its J2EE-based Web application server. The company has also made it possible for a ColdFusion server to interact with mobile phones and other non-HTTP clients.

With ColdFusion MX 7, which came out in early February, Macromedia is introducing a new set of tags that deal with such things as printing Web content, creating structured reports within Web applications, and creating rich forms for gathering input data, according to Dave Gruber, senior product manager. "This provides the end users with a richer experience and saves developers 60 to 70 percent of the time required to build these forms and structured reports," he said.

The first new tag, ColdFusion Document, addresses the problem of printing content from a Web page. "The pages are usually broken incorrectly, the graphics are split, and you have to cut and paste the sheets together to get a coherent document," Gruber said. The tag allows developers to wrap any content on a Web page, and ColdFusion will transform that content into a true document, displayed either in Macromedia's FlashPaper format or in PDF, Gruber said.

The new reporting capability and design tool, ColdFusion Report Builder, enables developers to create structures that can be used to generate dynamic reports. Gruber said this can be especially useful in the retail purchase process, allowing end users to get a full receipt or invoice similar to what they would receive from a store, instead of merely being able to print out a Web page confirming a transaction took place.

Another problem area addressed by the new release is that of forms, Gruber said. "There never has been a great way for developers to lay out a data capture form," he claimed. Macromedia has built a new ColdFusion Form tag into the Web server that enables developers to create Flash- or XML-based forms that are reskinable via an attribute change for a dif-

ferent look and feel, he said, without the need to code the logic for the presentation layer.

The standard edition costs US\$1,299, while an enterprise

edition, which enables high availability, failover and scalability, costs \$5,999. Trial downloads are available at macromedia.com/software/coldfusion.

GOING MOBILE

With this release, Macromedia has decoupled ColdFusion's application server from the HTTP protocol. Instead, there are gate-

ways that allow ColdFusion applications to be delivered to mobile phones, where users can interact with those apps.

Event gateways included with the release are for SMS text messaging, XMPP and Lotus SameTime instant messaging, JMS and general asynchronous messaging, Gruber said. ■

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In Business Rules Market, Updated Offerings Rule

New versions designed to get business users and developers onto the same page

BY JENNIFER DEJONG

The market for business rules software showed no signs of slowing down last month, with ILOG updating its flagship

JRules product, Innovations Softwaretechnologie readying its offering to work with the latest version of Eclipse, and Fair Isaac announcing plans for a March

release of Blaze Advisor 6.0.

New to JRules 5.0 is the ability to merge changes made to the developer repository with those that business users make

to theirs. In the previous version, developers had to reconcile the two by hand, "making piece-by-piece moves," said Henry Bowers, director of product

marketing for the Mountain View, Calif., company. Bowers said business users and developers must be able to determine what changed, how to get to those changes, and how to merge them so nothing is lost.

Business rules management software such as JRules enables developers to easily apply a policy, such as a price discount for a certain segment of customers, to an application without having to alter the application's source code. JRules 5.0 extends the collaborative effort to also include systems administrators, allowing them to "watch" and manage the deployment of rules (including remotely), much the same way that they manage other applications, said Bowers. "If you can't see the rule execution part of the system, you have no way of controlling it."


Also new to JRules 5.0, which starts at US\$10,000 per developer, is a plug-in that lets developers working in teams use the source control management tool, CVS, in tandem with JRules. For non-CVS users, 5.0 provides APIs and guidance for connecting to other source-code tools.


INNOVATIONS, FAIR ISAAC

Immenstaad, Germany-based Innovations Softwaretechnologie updated its Eclipse-based Visual Rules to work with version 3.0 of the open-source framework. The new release, which costs about US\$10,000 per developer, has the same look and feel of Eclipse 3.0 and includes a software palette that guides business users through the process of "drawing" an application's business logic without requiring help from a developer, said company spokeswoman Stefanie Peitzker. Visual Rules automatically generates Java or COBOL code, which the developer must then integrate with the application, she said.

Fair Isaac's Blaze Advisor 6.0 will include a single IDE for business users and developers and will provide best practices for both parties, according to James Taylor, a director of product marketing, but no further details were provided.

"Business rules end up in lots of different apps," said ILOG's Bowers. "You need to manage all of those rules the same way." ■





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News Briefs

NEW PRODUCTS

Compiler maker Absoft has introduced **Common License Manager 1.0**. The framework includes a client library, license server and management tools, and is designed for embedding software licenses into Linux, Mac OS X and Windows applications. The price is US\$300 per single user . . . Aevita

Software is offering **Advanced HTML and Encrypt and Password Protect**, a tool for creating protected Web pages designed to protect textual content, graphics, links and scripts. Pages encrypted with the US\$29.95 tool can be read by Internet Explorer, Netscape Navigator, Mozilla and Opera . . . Infragistics is offering **Rich Client WinCalc-Manager**, a new Excel-style calculation engine for data grids and embeddable text editors. It can be downloaded by current NetAdvantage suite subscribers. An ASP.NET version of that component is in beta . . . SAP has released **Portal Development Kit for Microsoft .NET**, a Visual Studio .NET plug-in that lets developers build content for the SAP Enterprise Portal using any .NET language . . . IBM has posted three Eclipse-based tools for mobile development to its alpha-Works site. **Voice Toolkit Preview** is an IDE plug-in for natural language processing and VoiceXML. **Multimodal Tools Plus** uses IBM's Embedded ViaVoice speech engine to build applications that use both voice and speech interaction. **Forms for Mobile Devices** is a set of wizards for creating Java applications that access and complete business forms stored locally on mobile devices, but which are uploaded to the server after they are filled in . . . Macweb.com has released the first beta of **iApp Server for FileMaker**, a Mac OS X application server that uses FileMaker's database. The US\$495 software installs as an Apache 1.3 module, and makes it possible to browse, sort, create and edit table records from a Web application. The app server runs FileMaker ScriptMaker scripts from those applications . . . Mindreef has launched **Share-It**, a collaborative Web services diagnostic system that lets developers publish and share Web services problems on the company's mindreef.net site. The service can test publicly accessible Web services, as well as share workspaces built by the company's SOAPscope testing tool.

UPGRADES

Version 2.0 of **Dataphor**, the .NET application development toolkit from Alphora, adds real-time translation and compensation for all major dialects of SQL; automated, dynamic user interfaces based on any perspective of the business model; new support for enforcing busi-

ness rules declaratively; a multiclient architecture, enabling both Windows and Web access to the same application; and an active client architecture that allows clients to automatically participate in server-defined business rules. The software costs US\$995 per developer seat, and \$295 per deployed Dataphor Server. Alphora is a division of Softwise . . . PathScale has shipped its **EKOPath Compiler Suite 2.0** for 64-bit Opteron and Xeon EM64T processors. The company says that the Linux compiler suite, for C/C++ and Fortran, offers performance improvements of 20 percent compared with the earlier PathScale compilers. The full suite costs US\$1,495 per year per seat . . . Version 2.0 of **Spread for Web Forms**, an ASP.NET grid/spreadsheet component from FarPoint, adds new cross-sheet formula referencing, automatic merging of cells with identical content, a percent cell type, and the ability to save and load from an Excel stream object. The component costs US\$699 per seat . . . Advanced Systems Concepts has updated its **ActiveBatch** real-time batch processing scheduler. Version 5 includes a new job planner that can work with global objects, and new support for variable values, which can be retrieved by jobs or passed between jobs. The new release also is more tightly integrated with Windows, but continues to work with Linux, OpenVMS and Unix . . . Serena has updated **RTM**, its requirements and traceability management software. Version 5.5 has a redesigned Web interface that allows for a more customizable home page for individual users. It can also link objects while maintaining complex relationships, and has better synchronization between requirements management and change management . . .

serena
Automating Change

► continued on page 22

Gupta Readies RAD Tool for Linux

Easy way for ISVs to convert Windows apps, says company

BY JENNIFER DEJONG

Spreading the word on Linux, Gupta Technologies announced last month a rapid application development tool that it says makes it easy for developers to convert Windows applications to run on the open-source operating system.

Team Developer 2005 for Linux is aimed primarily at ISVs that want to deliver Linux versions of existing Windows offerings, such as customer-relationship-management and point-of-sale applications, said Charles Stevenson, chief technology officer at the Redwood Shores, Calif., company, noting that the lack of business applications available for the open-source operating system has hindered Linux adoption on the desktop.

Team Developer for Linux claims to bring together in a single product all of the tools needed to ease the conversion

process. "It's a matter of taking the source code, opening it up and doing a compile, debugging any errors and deploying the application," he said. "[Even though] there are about 200 Linux development tools out there, each one does only a bit of what you want. You have to choose a language, look for an IDE, or rely on a text editor. Then you have to find a compiler, debugger and report generator—and make sure they will all work together."

In addition to code editing, debugging and configuration management capabilities, the graphical-based RAD environment, which sells for an introductory price of US\$995 per developer, automates database connectivity and includes management tools for tracking developer assignments, Stevenson said.

Team Developer for Linux is Gupta's second Linux offering. Last September the company

launched SQLBase 9.0 for Linux, which lets users of the Windows edition of its relational database take SQLBase files running under Windows and port them to Linux. The company also sells a Windows version of Team Developer.

The first wave of moving to Linux on the desktop is about converting existing Windows applications, and that is under way, according to Gupta.

The second wave, which the company predicts will gain momentum in 2006, will see developers writing and deploying new applications to the Linux desktop, Stevenson said, noting that desktop Linux applications are more popular in Europe and Asia than they are in the United States. Developers writing Linux applications in Gupta's new offering will be able to take advantage of the product's coding assistant, which "won't let you enter invalid code." ■

Rally Rallies Around Agile Processes

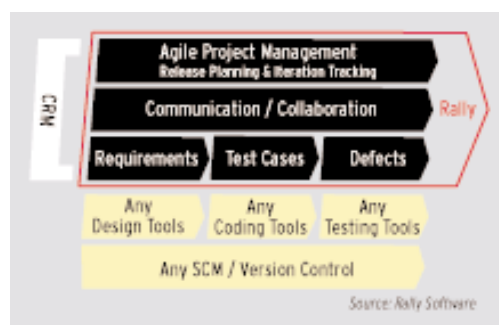
Software update includes quick-start paths

BY DAVID RUBINSTEIN

Believing that agile software development can be implemented in an organization in a piecemeal fashion, Rally Software late last month released version 4 of its namesake project management software with a new user interface for jump-starting adoption of the processes.

"There can be incremental adoption, either one team or role at a time, without trying to sell a macro religion" to an entire organization, said Richard Leavitt, Rally's vice president. "We had had a baked-in generic agile process [in the software], but it was hard to start with just managing a project or just gathering requirements."

The company, Leavitt said, has undergone a transformation in its fundamental mission, from simply integrating project management with workflow for tests and defects to offering customers knowledge, coaching and tools for agile success. The software is touted as process-agnostic. "This is our footprint; we tie



Rally brings together agile project management with requirements, testing and defect tracking.

project management activities to the artifacts a team is committed to delivering. Teams just getting going with iterative development want to see an easy path for their artifacts."

Version 4 includes new dashboard views that show requirements and their relationships, find orphaned requirements and tests, and identify all scheduled and unscheduled requirements. New interoperability features include exporting work to design and version-control tools as well as to an automated test environment, he said.

A new tab structure in the dashboard simplifies project planning and job scheduling, requirements lookup and test-

ing, he added. The two new quick paths to getting started with Rally and agile development are change-request-driven and requirements-driven, Leavitt explained. "We've abstracted what agile processes are about, so that tiny iterations can be tactically managed. We've moved away from a baked-in process. This allows folks to see and access planning and scheduling artifacts; it's a big advancement in views that are available."

Rally 4 users doing requirements-driven development, for example, would use the project management software to drill into requirements, see the dependencies and scheduled or unscheduled artifacts, and link orphaned requirements to features, Leavitt said. Meanwhile, testing and defect-tracking procedures are associated with the piece of functionality being delivered.

"Plenty of companies view [short iterations] as an imperative," Leavitt said. "They know they can't respond in 6- or 12- or 18-month cycles. Agile is not a fad." ■



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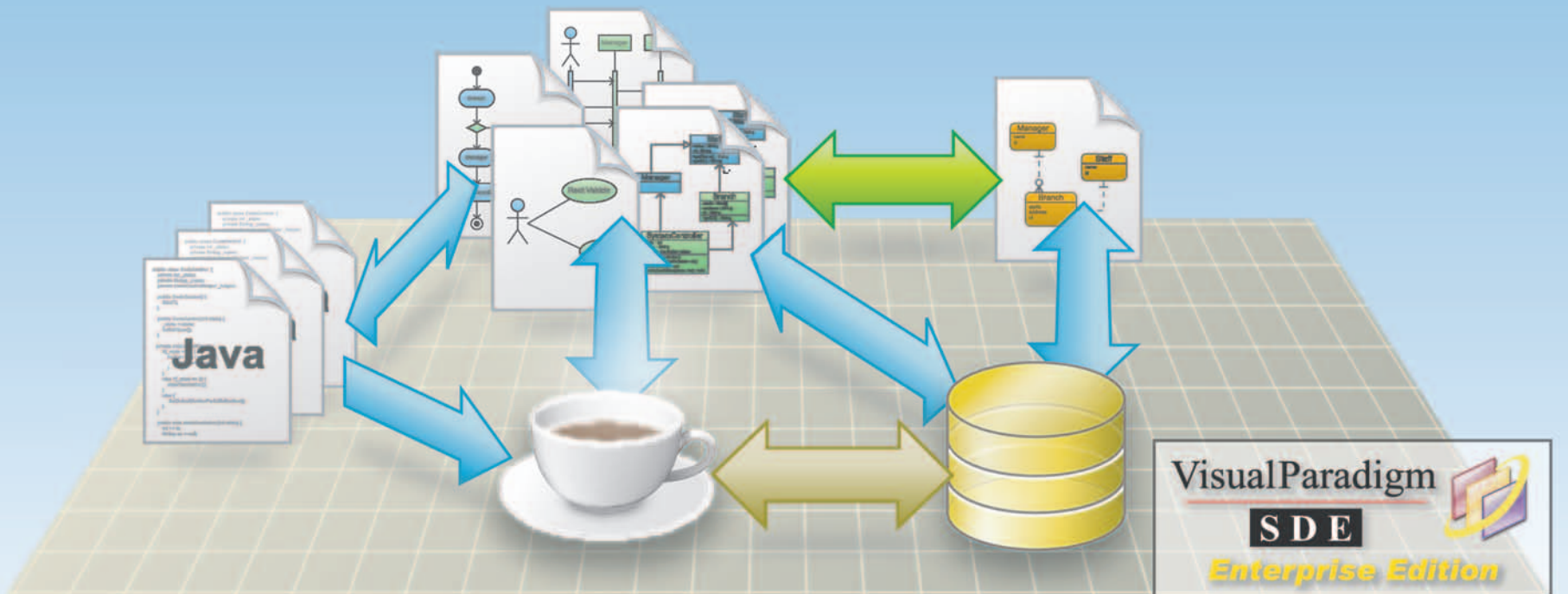
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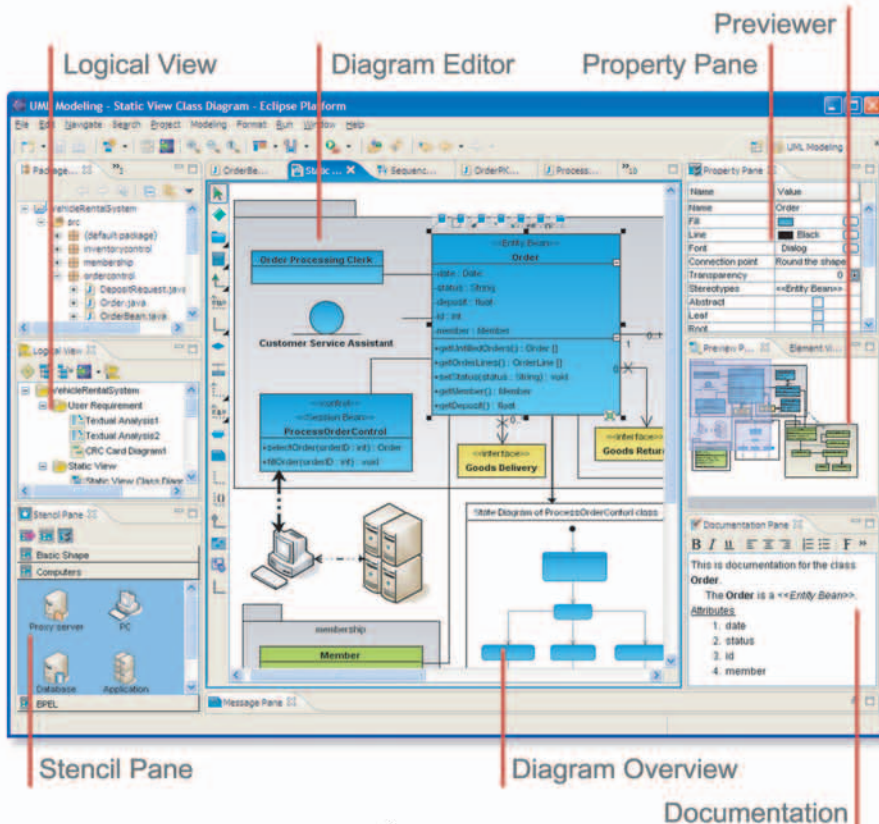
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The Challenge of Partnering With Microsoft

SourceGear latest company to alter its product plans to remain competitive

BY JENNIFER DEJONG

When a small company partners with Microsoft, it never calls the shots. But if it is willing to change its product line as Microsoft changes its own, new opportunities can arise.

The latest company to do just that is Champaign, Illinois-based SourceGear, which last month announced plans to develop an add-on to Team Foundation, Microsoft's forthcoming source code control and bug-tracking offering expected in Visual Studio 2005 Team System.

Code-named Project Allerton, the planned add-on is a Linux, Mac OS and Solaris client for Team Foundation, said SourceGear's Eric Sink, vice president of product marketing.

"Microsoft needs someone to provide access to non-Windows clients. [Otherwise], if you have even one Linux or Mac machine, Team Foundation is not right for you," he said, noting that Microsoft is aiming Team System not just at all-Windows shops, but also at those with heterogeneous computing environments.

SourceGear is not the first company to have to adjust its product plans in the wake of actions by Microsoft. When Microsoft announced plans to include code coverage capabilities in Visual Studio Team System, expected this summer, Compuware recognized that the new features would compete directly with those offered by its own DevPartner Studio.

To compensate, earlier this year Compuware launched two new, noncompetitive offerings: DevPartner Fault Simulator, which tests error-handling code, and DevPartner SecurityChecker, which looks for vulnerabilities in ASP.NET applications.

Also, Citrix acknowledged Microsoft's Longhorn will compete with its MetaFrame access infrastructure, but neither company has yet specified how.

Delivery of Allerton, for which pricing has not yet been announced, will coincide with Microsoft's delivery of Team System, due this summer, with a beta version expected during the first quarter, a Microsoft spokesperson said. The company said in a statement that it is "pleased to see SourceGear building on Visual Studio," but

did not otherwise comment on SourceGear's plans.

SourceGear is banking on Allerton to offset potential losses that could occur later this year

when Microsoft adds remote access capabilities to Visual SourceSafe, its current source code management offering. When that happens, SourceSafe

users who need to access version control data remotely will no longer have to rely solely on SourceOffSite, SourceGear's remote access add-on for Source-

Safe. "Being a Microsoft partner cannot happen without being a Microsoft competitor," said Sink.

"The partnership relationship works, as soon as you start understanding it from their perspective," Sink said. "If you don't understand this, you get upset. But when you get it, you find out they are not a bad partner." ■

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In 2000, Weighty Stories, Tiny Headlines

◀ continued from page 1

time. The dot-com bubble was still inflating. Bill Clinton was still in the White House, the twin towers of the World Trade Center still dominated the Manhattan skyline. If storm clouds were gathering on the horizon, we didn't see them. On the day the first issue of the newspaper appeared—Feb. 23, 2000—the Nasdaq stock index closed at 4,550.33. Yes, much has changed since then, and the market collapse was in progress by our first anniversary.

Fortunately, SD Times was able to weather the storm; the publisher had the advantage of being a non-venture-funded start-up, so we could batten the hatches and wait for better weather. But as the recession dragged on through 2002 and 2003, technological innovation and advances in software development gave us plenty to write about. The arrival of .NET. The rise in popularity of agile processes. The debates about Linux versus Windows

focused on ROI; and the invention of a new corporate open-source model changed the playing field.

TIMES A-CHANGIN'

While the industry changed, so did SD Times, of course. If you compare the first issues against the one you're holding now, some differences are obvious. We used smaller headlines in those early days; perhaps it was a sign that we were still timid, still trying to find our voice. (Our second issue had some amazingly tiny headlines. What were we thinking?)

But find it we did, even in that first issue, reporting stories across the software development spectrum. "Corel, Inprise Agree to Merger Plan, Target Linux Market: \$2.44 billion transaction will create a company that can offer applications and tools for growing OS," we wrote on page 8. Well, that didn't quite happen as either company expected, did it?

We asked interesting ques-

tions, like "Will Linux Shatter Windows 2000," while also discussing Novell's new anti-Microsoft Web site. That was before Novell became a Linux player, of course. We talked about the burgeoning trend of vendors putting ads inside their applications—a trend that failed to materialize the way that our sources predicted.

One view into a newspaper's character is through its regular columns, and SD Times debuted with six. Three of them are still with us under new names: Win-Watch (now Windows & .NET Watch), Middle-ware Watch (now Integration Watch) and MoneyWatch (now Industry Watch). The book-review, Web-development and open-source columns are history, but Java Watch has fit nicely into the lineup. Such is progress.



This is how SD Times looked when it first debuted in February 2000.

FOLLOWING THE STORIES

It's fun to look back through old issues of the newspaper to see the dead ends and dead compa-

nies. But in reality, many of the stories we began following in our first year are still important today. In the first issue, we discussed the "Battle of the Embedded RTOSes," focusing on the real-time operating system wars between Red Hat and Wind River. That war is still going on today.

Other important themes in the first issue included software testing, problems with finding qualified developers for new projects and the application service provider market. The next few issues talked about software piracy, host integration, XHTML 1.0, defect tracking, app security, reusable components, databases and a whole lot more.

Five years later, what are we writing about? Still writing about J2ME and Java-based development; still writing about Linux, Solaris and Windows; still covering the Microsoft ecosystem; still talking about the Web; and still talking about software quality and security.

We'll continue to cover the issues that are important to development managers, and try to help with the navigation through old technologies and new.

Because that's what SD Times is all about. ■

Five Years Later, Where Are They Now?

Of the hundreds of companies covered in SD Times in the 20 issues of 2000—the first year of our publication—a large number have changed in some way. Five years later, stalwarts such as IBM and Wind River are still in business, but many others have either sold off their assets or been acquired outright. Others have changed names, and a few simply vanished without a trace. Here are some highlights, from A to Z.

Allaire	Acquired by Macromedia	💰
AudeSe	Acquired by Wind River	💰
Be Inc.	Assets acquired by Palm	💰
Bluestone	Acquired by HP, then abandoned	💰
Caldera	Acquired SCO name and Unix assets	💰
CloudScape	Acquired by Informix	💰
Excelon	Acquired by Progress Software	💰
Geodesic Systems	Assets acquired by Veritas Software	💰
Informix	Acquired by IBM	💰
Inprise	Changed name back to Borland	💰
Interbase Software	Acquired by Borland	💰
ISI	Acquired by Wind River	💰
Kinecta	Acquired by Stellart	💰
KL Group	Renamed Sitraka, acquired by Quest Software	💰
Lineo	Reorganized as Embedix, acquired by Metrowerks	💰
Lynx Real-Time Systems	Renamed LynxWorks	💰
Metro Link	Vanished	💰

💰 Sold 🔄 Renamed 🗑️ Gone

Metrowerks	Acquired by Motorola, spun off with semiconductor unit as Freescale	💰
Microware Systems	Acquired by Radisys	💰
OnCore Systems	Out of business	💰
Persistence Software	Acquired by Progress Software	💰
Poet Software	Acquired by Versant	💰
Rational	Acquired by IBM	💰
SCO	Renamed Tarantella	💰
Sequoia Software	Acquired by Citrix	💰
Sheridan	Merged with ProtoView to form Infragistics	💰
SilverStream	Acquired by Novell	💰
Software Emancipation	Renamed UpSpring, acquired by MKS	💰
Starbase	Acquired by Borland	💰
Talarian	Acquired by TIBCO	💰
TogetherSoft	Acquired by Borland	💰
VenturCom	Renamed Ardence	💰
WebGain	Sold assets to various companies	💰
XML Solutions	Acquired by Vitria	💰
Zucotto	Vanished	💰



Borland to Deliver on Delivery Strategy

◀ continued from page 1

(for modeling), CaliberRM (for requirements management), StarTeam (for change and configuration management), JBuilder (for writing Java applications) and Optimizeit (for test-

ing), Kerpan said.

Each role can see information pertaining to other roles, without having to fire up separate products. For instance, the user of Core Developer can view requirements data. In the

near future, Core SDP will rely on a single repository, whereas "the IBM platform still requires several," Kerpan said.

IBM did not dispute that claim. "The team tools for requirements management,

change management and configuration management, which plug into Eclipse along with many other development environments, have their own repositories but are tightly integrated across them, providing

traceability between activities," said Eric Naiburg, group market manager for desktop products at IBM Rational. Some of the requirements data in Borland's Core SDP is still stored in its own repository before being synchronized with the Core repository, Kerpan said.

NO IDES FOR EXECS

What's more likely to differentiate Borland's platform from those of its competitors are the pieces of Core SDP that the company has not announced. The platform is expected to provide additional role-based tools for project managers and line-of-business managers, among others, Kerpan said. He did not provide further details or specify a delivery date.

Core SDP is part of Borland's larger Software Delivery Optimization (SDO) strategy, announced last September, which aims to bring a manufacturing-like discipline to the business of delivering software. It differs from IBM's and Microsoft's strategies in that it involves not just business analysts but also members of senior management.

"[IBM and Microsoft] focus inwardly on technology people, touching the business only tangentially," Borland CEO Dale Fuller said in September. The Core offerings for business executives will take the form of a portal—essentially a view into the software development process—not an IDE, Kerpan said. "You will see metrics and information showing up in a place that makes sense."

In addition to actual tools, SDO aims to deliver strategy advice on how best to develop software that successfully implements business goals. In January, Borland took a step in buying some of that expertise, when it acquired TeraQuest Metrics, a process consulting firm in Austin, Texas.

Core SDP will include two versions of Core Developer: one based on Borland's JBuilder, the other on the Eclipse IDE, Kerpan said. Future versions are likely to support Microsoft's development environment, he said.

Notably absent is Core SDP support for Borland's C++Builder. In December, Borland sent an open letter to the C++Builder community, informing members that it would no longer sell the offering as a separate product, but would support it as part of the Delphi IDE family. ■

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RFID: Developer Help Is on the Way

◀ continued from page 1

While early reports indicated resistance to the mandate, the Incucomm study found that only four companies admitted they were making no effort to comply, and estimated that about another four did not want to admit as much. However, an additional 37 volunteered to take part.

Cost estimates also were far lower than analyst projections. According to the study, the median expenditure by vendors for RFID-related goods and services was around \$200,000. Some researchers had estimated costs to be as much as \$3 million, and that implementations by government agencies would be in the hundreds of millions.

Exaggerated reporting aside, implementing RFID into a supply chain is not to be taken lightly. According to Incucomm CEO Steve Roermerman, RFID label placement alone can be half the job; the way the technology works can be affected by what's inside. "To create a viable, repeatable and reliable process, you have to think about foil products or those with a lot of liquid, such as soap," he said.

The so-called RFID interrogator or reader uses ultra-high frequency microwaves to scan for tags, Roermerman explained. Tags contain a transponder for sending and receiving data about package contents. "Some materials can change the way the microwave field interacts with the RFID tag. So small changes in where you place the label will make impressive changes in how the tag behaves when it talks to the interrogator."

The read-rate standard for Wal-Mart's mandate is 100 percent, Roermerman said, which is causing the Wal-Mart suppliers targeted for the trials to "double-check that they have created a case that will read," he said.

For many suppliers, that simple a level of integration was enough. But for those wanting to track merchandise along a supply or manufacturing line, Roermerman said significant challenges remain, including factoring in the speed of the conveyor and the placement of interrogators. "Even if they get the scanning right, they still have to integrate that [data] into a material handling system."

That's a problem for many developers, Roermerman asserted, because of an unfamiliarity with what he called areas outside the air-conditioned spaces.

He described a seminar at which he spoke about RFID and mobile technology to a group of academics and IT executives. "I couldn't understand why we were so different in our perspectives. Finally I asked if any of them had ever had a shipping department in their control, driven a truck, been in a warehouse or on loading dock. No hands." And despite their lack of experience, he said the audience disagreed with his assessment that they were responsible for automating processes they had never actually seen. "I didn't think that was an unfair characterization. The factory, dock and freight yard are alien environments for a lot of people doing IT stuff, so it's easy to make bad assumptions."

MIDDLE WHERE

Though it might seem like RFID is a perfect market for middleware, solutions have been slow to emerge. And the vendors early in the market, including GlobeRanger and OAT Systems, have had a tough time building on RFID's unsure foundation. "None of them have a very stable value proposition," Roermerman said.

IBM in December launched WebSphere RFID Premises Server—its first RFID solu-

tion—which includes middleware for monitoring, aggregation and interpretation of RFID events, an integration server for merging the data with enterprise systems, and a series of compatible readers, scanners and printing devices. Sun in January partnered with SeeBeyond to offer an RFID solution targeting retail. Microsoft has been working on a pilot project involving an RFID edition of its Axapta warehouse server since January 2004. In April of that year the

company joined EPCglobal, the organization governing RFID standards. The consortium updated its RFID tag specifications in early January.

Companies are waking up to RFID market potential and so IT must follow. "This is virgin territory for IT," Roermerman said, "which says to me that there's incredible productivity improvements to be made. And [developers] taking a flexible approach that are not too dogmatic will do the best." ■

New Suites for Java Enterprise System

BY YVONNE L. LEE

SANTA CLARA, CALIF. — Sun announced at its Network Computing '05 event last week five new suites that repackage portions of the Java Enterprise System for specific purposes.

Licenses for all suites, which include Java Studio Enterprise and Java Studio Creator, are US\$50 per employee per year. The per-employee charge is for all full-time non-contract employees in a company, and is not a seat license, said Joe Keller, vice president of marketing for Java Web services and tools.

The first of the suites, the Application Platform Suite, is designed for deploying service-oriented architectures. It includes the enterprise edition of the Java System Application Server, which includes the Java 2 Platform Edition, J2EE 1.4, high availability and failover. It also includes the Web server, portal server and portal mobile access.

The Availability Suite includes the latest versions of Sun Cluster and Sun Agents.

The Communications Suite is designed for building mail-

enabled and communications-enabled applications. It includes the Messaging Server, Calendar Server and Instant Messaging.

The Identity Management Suite includes Identity Manager, Access Manager and Directory Server Enterprise Edition.

The Infrastructure Suite is being marketed toward small and medium-sized businesses, as well as departments, according to Keller. It includes Web Server, Directory Server Enterprise Edition, Access Manager, Web Proxy Server and Application Server Standard Edition. ■

SD WEST LOOKS FOR BOOST FROM ECONOMY

BY YVONNE L. LEE

Crediting a stronger economy, representatives of this year's SD West Conference & Expo said attendance and exhibits both will be increased.

"Companies have training budgets again," said Kate Adams, marketing director for the show. She said the registrations are up between 10 percent and 15 percent for the conference, which will be held March 14-18 at the Convention Center in Santa Clara.

In addition, this year's conference will offer 164 new classes, the largest number of new classes in the show's 18-year history, she said. These classes fall into 12 technology tracks with the theme "Develop an Advantage."

Gerald Weinberg, author of "The Psychology of Computer Programming" and "An Introduction to General Systems Thinking," will present the first keynote, on Monday.

Wednesday and Thursday will feature keynote presentations from David Chappell, principal of the consulting firm Chappell & Associates, and software weblogger Joel Spolsky, respectively.

Craig Symonds, Microsoft's general manager of Visual Studio, will present the technical keynote, titled "Personalized Productivity With Visual Studio 2005," on Wednesday.

Exhibits also will be up, according to Adams. In January, show producer CMP Media had secured main exhibitors IBM, Intel and Microsoft, where only IBM and Intel exhibited at last year's show, she said.

"The fact that all three of them are on board so early on is great," Adams said, "and they tend to bring in their partners."

Among the new exhibitors will be component vendors, which will have a separate pavilion, Adams said. ■

SO MANY SPECS, SO LITTLE TIME

Tag Data Spec 1.1 - Defines encoding schemes for UCC-based identifiers, such as Serial Shipping Container Code and Global Location Number. **Status: Board-ratified**

Reader Protocol 1.0 - Communications messaging between tag readers and EPC-compliant software, including Savant. **Status: Working draft updated September 2003**

Savant Spec 1.0 - Defines middleware between tag readers and enterprise apps. **Status: Working draft updated September 2003**

Physical Markup Language Core Spec 1.0 - Provides a standard format for data captured by readers, including vocabulary and XML schema. **Status: Recommended as of September 2003**

Object Name Service Spec 1.0 - Defines how metadata and EPC services are located within an Electronic Product Code. **Status: Working draft updated April 2004**

These specifications are being maintained by EPCglobal (www.epcglobalinc.org), a venture between EAN International and the Uniform Code Council.



CONFERENCE: March 14-18
Convention Center, Santa Clara

CONFERENCE HOURS:
Monday-Friday, 8:30 a.m.-5 p.m.

EXHIBIT HOURS:
Tuesday, 5 p.m.-7 p.m.

**Wednesday, 12 p.m.-2 p.m.;
3 p.m.-6:30 p.m.**

**Thursday, 12 p.m.-2 p.m.;
3 p.m.-6 p.m.**

KEYNOTES:

Monday, 12:15 p.m.-1:15 p.m.,
"Fifty Years of Software Development—Lessons From the Ancients,"
Gerald Weinberg

Wednesday, 12:30 p.m.-1:30 p.m.,
"Software in a Service-Oriented
World," David Chappell

Thursday, 5:30 p.m.-6:30 p.m.,
"Fireside Chat on Software,"
Joel Spolsky

TECHNICAL KEYNOTE:

Wednesday, 5:30 p.m.-6:30 p.m.,
"Personalized Productivity With
Visual Studio 2005," Craig Symonds
www.sdexpo.com

Sun Sheds Light on Open Version of Solaris

◀ continued from page 1

of analysis firm The Sageza Group. "[Sun is saying,] we want to make it public, but we want to keep it under our control."

Sun president Jonathan Schwartz first announced the company would offer Solaris as open source last June, but details have been slow to emerge following his remarks at a news conference in Shanghai, China.

Sun hopes to fill the fifth spot with a well-known person, said Loiacono. "We have a short list of people we think would be good. They are industry people, well recognized," he said.

That person will not be Linux creator Linus Torvalds, he added. "Linus isn't someone interested in things that aren't GPL."

While Sun plans to release the code to Solaris—some 10 million lines of code, according to Loiacono—it could take several years to see whether it takes root among developers, predicts Open Source Development Labs' open-source architecture specialist, Bill Weinberg.

"Open source doesn't happen by fiat," he said. "You can have a code, but that doesn't mean a community will automatically spring up." Sageza's Ryder added, "If Microsoft was to do this, there would be no question that they would succeed, but Sun is not Microsoft."

The OpenSolaris binary will be supported by the community rather than by Sun Services. Solaris 10, released Jan. 31, is Sun's supported and maintained distribution of the operating system.

OpenSolaris will be licensed under OSI's new Common Development and Distribution License (CDDL). The license requires that if developers change the codebase, the resulting code must be submitted to the community. However, in the event that developers take the CDDL licensed code and add it to some other code without modifying the CDDL code, the other code does not need to be submitted to the community.

'CROSS-POLLINATION' FEAR
Having a license that is incompatible with the GPL could discourage some organizations from working with OpenSolaris, according to observers. "A lot of developers will be very cautious for fear of cross-pollination," said OSDL's Weinberg.

"People don't want to end up down the road with an SCO situation where [they] used something of mine, which was thought to be open source, but was really from someone else's intellectual property," said Ryder. "For de-

velopers, that could become a royal pain if everyone ends up with their own licensing models."

That licensing difference may cause developers to work with operating systems that have GPL software or software

with compatible licenses such as Linux or BSD, Ryder said.

"By having a different licensing model, people are going to take extra care in the software they use and distribute," he said. "If there's a viable alternative

that's GPL, that's going to be the path of least resistance."

Sun initially has released only a small part of the Solaris code, its trace performance monitoring utility. The rest, according to Loiacono, will arrive early in the second quarter.

OpenSolaris will be available at opensolaris.org. ■

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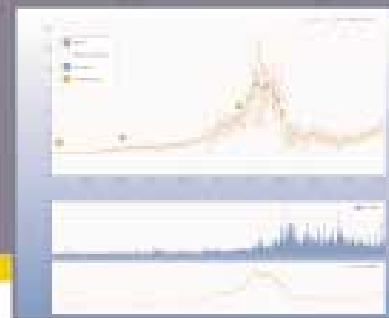
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Visionary Keynotes

Understanding the Arts Of Your Adversary

James A. Whittaker

Director of Center for Information Assurance, Florida Institute of Technology

Why do hackers target your company, your products or your Web site? This engaging keynote explains the motivations and techniques of your adversaries and, more important, sheds light on what you can do about it. Software security expert James A. Whittaker will show actual attacks and talk broadly about the techniques hackers use against Web sites, applications and networks. He will address both basic and advanced hacker attacks from planning the hack, finding a vulnerability and finally executing the exploit. This fact-filled keynote address will set the stage for the technical classes to come, by providing a better understanding of your adversaries and how to defend against them.



The Case for Secure Software

Mary Ann Davidson

Chief Security Officer, Oracle Corp.

"IT" means more than information technology. It also means "infrastructure technology," as virtually all providers of critical infrastructure have an IT backbone. Your organization's IT must become as safe, secure and reliable as physical infrastructure—and that requires a cultural revolution within our profession, so that IT becomes a discipline, and a profession to the same degree as the engineering disciplines that create physical infrastructure. While the cultural revolution in security needs to be led by the IT industry's leading companies, all of us have a vital role to play in changing this important dynamic, so that security is a baseline requirement for IT products, instead of an afterthought.



Change the Security Paradigm or Bust

Amit Yoran

Former Cyber Security Chief for Homeland Security

Over the past two decades the Internet and those participating on it have let their security rely heavily upon an internal trust model. This trust concept has led to building network security perimeters and an increasingly complex set of security products to keep miscreants out. Today's rapidly changing computer systems, distributed uses and nature of networks as platforms have led to a state of almost complete ineffectiveness of traditional security approaches. Modern computing environments include distributed users, remote code download and execution, Web services, XML, RFID, mobile digital platforms and dynamic participation on a multitude of networks.



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David LeBlanc, Co-author of "Writing Secure Code"

Hung Nguyen, CEO, LogiGear; Author of "Testing Computer Software" and "Testing Applications on the Web"

Caleb Sima, CTO, SPI Dynamics

Kenneth van Wyk, Co-author of "Secure Coding: Principles and Practices"

John Viega, CTO, Secure Software; Author of "Building Secure Software"

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News Briefs

MORE UPGRADES

< continued from page 10

Eiffel Software has started the beta for **EiffelStudio 5.6**, its IDE for the Eiffel language. This new release is the first to run on 64-bit Linux, Solaris 9 and Windows; source code doesn't need to be changed to accommodate a move from 32 bits to 64 bits. . . . CodeMesh has updated **JunC++ion**, its tool for integrating Java and C++ components into



composite applications. Version 2.2 improves the usability of the code generator and has enhancements to the API documentation

generator; it can now translate Javadoc comments into HTML documentation for generated C++ APIs. It also supports multiple proxy modules, letting developers mix and match types from different DLLs. In addition, this release supports Mac OS X and IRIX. . . . Version 2.2 of **Maguma Workbench**, a PHP integrated development environment from Maguma GmbH, adds a new PHP function list, drag-and-drop editing and hotkey-based hide/restore for tool windows. There's also a new SDK for creating add-in modules for the editor. Maguma Workbench costs €69. . . . The mid-January update of **Amazon E-Commerce Service 4.0**—a set of Web services available for Amazon.com partners—is now available for Amazon.fr and Amazon.ca. This update also resolved WSDL errors when using Visual Studio .NET. The Web services work on the U.S. and U.K. sites as well. . . . Version 2.0 of **ClusterReplica MSSQL Edition**, a database binding tool from XLink Technologies, improves the network connection method used to let a clustered server communicate with clients. It also adds new version points for real-time data replication services, as well as data file trace-back capability to help avoid file corruption and improve failover operations. . . . Dundas Software has updated its gauge component for ASP.NET and Windows Forms. **Dundas Gauge for .NET 1.5** adds new interactive client gauges, Flash rendering, data streaming and new knob gauge styles. The component can be licensed for US\$699 per seat; it's also included in the company's Dundas Chart for .NET Enterprise Edition suite. . . . DTM Soft has updated **DTM Schema Reporter**, a US\$110 reporting tool for examining database schema. The new release can use XML format for reports, in addition to RTF, HTML or plain text. It also can generate security reports from SQL Server databases. . . . Composite Software has updated its enterprise integration software. **Composite Integration Server 3.0** adds a new intelligent query function, designed to help developers determine the optimum data integration plan in real time. The new release also has improved parallel-processing performance, and can take better advantage of multi-processor hardware. Aggregate data can now be published in relational form using XML or Web services.



PEOPLE



Bill Joy has joined venture firm Kleiner Perkins Caufield & Byers as a partner. Joy was a co-founder and chief scientist of Sun, but left the company in September 2003.

. . . **Andrew Tridgell** has become a fellow at the Open Source Development Labs consortium. In 1992, Tridgell created Samba, the open-source project that lets Linux

applications access Windows file servers using Microsoft's SMB and CIFS protocols. . . . The CEO of palmOne, **Todd Bradley**, has resigned, effective the end of this month. The company is searching for a permanent replacement, but in the interim, the hardware maker will be led by **Ed Colligan**, the company's president. No word yet on where Bradley is going next. . . . Visual Numerics has promoted **Philip Fraher** to president and CEO; he had been COO. Fraher replaces **Richard Couch**, a turnaround specialist who had been with the company since 1990. . . . **Tom O'Dea** is the new chief revenue officer of Corda Technologies, a component vendor. O'Dea, who will be responsible for sales, marketing and partner programs, had been founder and president of Catalyst, a professional services firm. . . . Web services security company Reactivity has hired **David Ashton** as business development manager, and **Glen Kasoka** as VP of product management. Ashton had been VP of business development at Cyclone Commerce; Kasoka had been senior director at Extreme Networks. ■

New Management System Deals With Project Issues

Hurff-Webb releases its first commercial software

BY DAVID RUBINSTEIN

The ability to assign issues to multiple users and to transfer issues between projects highlights the new features in IssueBridge 3.1, the first commercial release of a project and offshore management system from Hurff-Webb.

IssueBridge, created in 2000, was not sold as a product until this release, according to David Webb, one of the founders of the Jacksonville, Fla.-based company. Previously, it had been used internally. "The latest application we've found the need for is [working with] programmers overseas. You need to assign different pay rates to them and have their tasks ready for them when they get to work," Webb said.

The system, which can be

accessed via thin-client software, has at its center an Oracle-certified repository where issue solutions are stored, so that if a developer comes across an issue, he can check to see if it's already been resolved before, which saves time and money, Webb said.

With many other project management offerings on the market, Webb said IssueBridge is different because "it's quick, lightweight and has simplicity. When someone from the line of business can use the system and track their work, it makes management simple."

IssueBridge 3.1 costs US\$540 per user for up to 49 users; the price drops to \$340 per user for more than 250 licenses. It also is available via an ASP model, which adds a 20

percent hosting and maintenance charge annually.

To run the software locally, an organization must have an Oracle relational database and a J2EE servlet engine (the software has been certified against BEA's WebLogic, IBM's WebSphere and Orion 1.5.2); access is via Web browser.

The software lets managers assign issues and defects to more than one developer at a time; the console tells users which issues are locked or unlocked for work. Other features of IssueBridge 3.1 include enhanced alerting, with new support for JMS allowing for asynchronous notification; the ability to export reports to HTML, Excel and PDF formats; and a customizable interface for tailoring roles and priorities. ■

LogiGear Wants to Make Sure Testers Test

BY YVONNE L. LEE

If a company's testers are spending much of their time building scripts, something is wrong, according to Hans Buwalda, chief architect at LogiGear, which makes a test automation tool that runs from within Excel.

The tool, called TestArchitect, is designed so that testers can test and not program, Buwalda said. "If the tester is busy automating the test, the tester is no longer testing," he said.

Buwalda said his company aims to raise the percentage of tests that organizations run

automatically from its current 20 percent to 30 percent to nearly 100 percent.

"[Testing] won't be treated fairly and well if it's not fun," Buwalda said. "Fun in the sense not with beer and everything, but fun in the sense that it should be inspiring. A tester needs to look for problems. If these things were easy to find, they wouldn't be there. What you need is a tester who uses his or her brain." A more inspirational process will help testers to be more creative about the kinds of things they

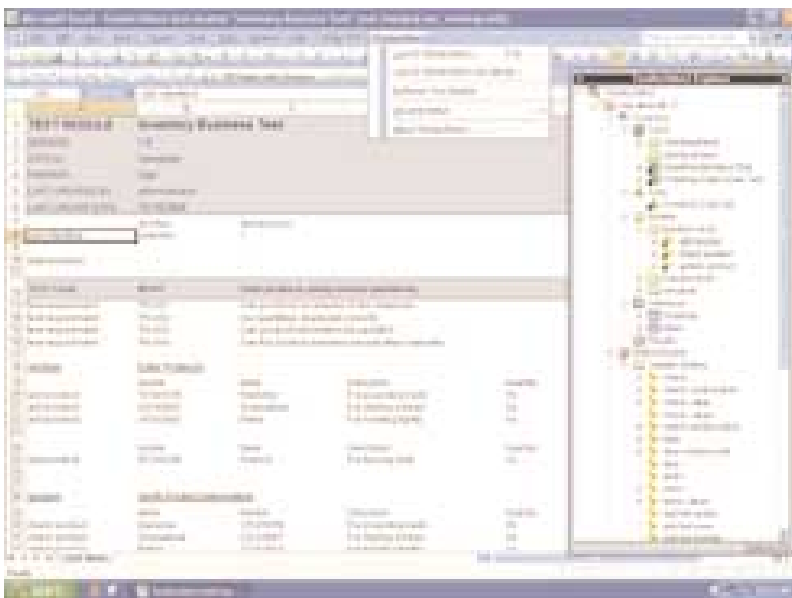
seek, which in turn would help ferret out those hard-to-find bugs, he said.

In addition to running inside Excel, there is another feature designed for nonprogrammers: TestArchitect works by issuing high-level commands that relate to a function, rather than lower-level commands relating to whether a specific piece of code has been executed.

New features in the current version, TestArchitect 2.0, which was released in late January, include a built-in list of actions, built-in version control and project tracking, and the capability of working with both existing tools and its own built-in Web automation.

The program includes a window for detailing how to run external scripts, including the file location of the external program and any text necessary for manual execution.

Pricing begins at US\$5,000 for client, repository, script creation tool, management tool and all the automation with a single simultaneous license access the scripts. ■



LogiGear's TestArchitect installs as a module within Microsoft's Excel.

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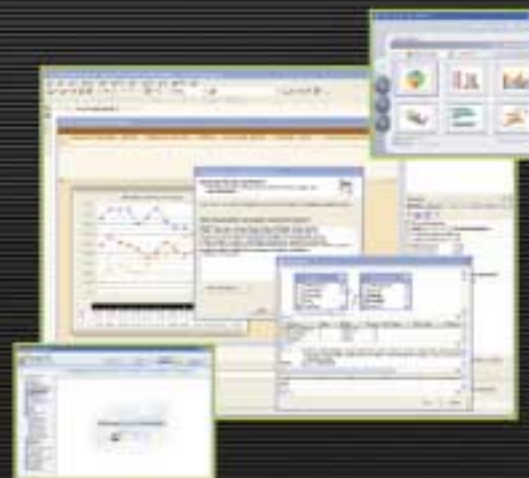
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9:58 am

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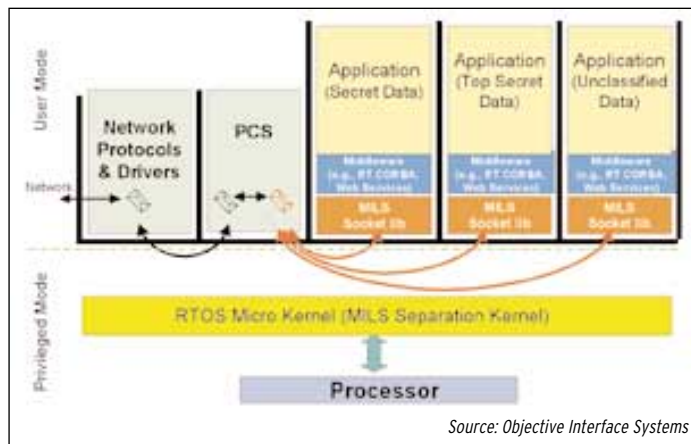
MILS spec gets buy-in from government, aerospace, military; RTOS vendors also on board

BY EDWARD J. CORREIA

Embedded middleware vendor Objective Interface Systems is developing a new security solution that uses the partitioning capabilities that some RTOSes employ for fault tolerance and is applying it to deliver the type of security required by government agencies, including the Air Force Research Laboratory and National Security Agency.

The Partitioning Communications System (PCS) was developed along with those agencies and military contractors Lockheed Martin and Rockwell Collins, and is expected to reach prototype stage before the end of March.

According to Objective CEO Bill Beckwith, the new middleware conforms to security requirements set forth in the Multiple Independent Levels of Security (MILS) specification, which defines systems in terms of information flow, data isolation, periods processing and damage limitation. He described MILS as the overlap between safety-critical and security-critical systems. "It's a com-



The new method adds security by applying kernel separation techniques used for improving reliability.

bination of real-time embedded and high-separation. The idea is to take the kinds of technologies that are useful for separating failures and use them for security separation," Beckwith said. Green Hills, LynuxWorks and Wind River all have begun working on compatible versions of their RTOSes, he said, adding that the technology has applications in desktop and server environments as well.

Beckwith illustrated the risk: "If I were to write a virus that

took over a Windows box, it would not actually be able to send data out through a VPN, but it could control the flow of packets. Something watching on the other side could see the [change in] timing and could leak out gobs of information. The existing communications infrastructure is totally incapable of handling these kinds of threats."

The Objective middleware solves that problem, Beckwith said, by adding a layer on top of

MILS-compliant operating systems. "PCS takes the separation properties of the separation kernel and allows secure communication between various layers, and does all the encryption and timing separation to make sure no one can take over the timing channels." The result, he said, is self-contained application security that doesn't depend on any particular infrastructure. "You don't have to trust your switches, routers or protocol stacks; all the information is erased before it gets there."

Regardless of how infected one application might become, Beckwith continued, it cannot affect the operations or data of another. "That makes MILS

wonderful for [military] systems, where you have secret, top-secret and unclassified data all on one computer, because you can prove that you can keep them separate." PCS is being developed according to the EAL 7, the highest security under the Common Criteria for security requirements, he said.

General availability of the Partitioning Communications System middleware is expected before year's end, Beckwith said; pricing has not been determined. The company also is developing a MILS-aware version of ORBexpress, its flagship embedded and real-time CORBA ORB, but gave no release timetable. ■

A Different Kind of UML

LynuxWorks releases User-Mode Linux for Apple PowerPC G5 development hosts

BY EDWARD J. CORREIA

Developers targeting designs based on IBM's 970 processor have a new tool for their arsenal. RTOS vendor LynuxWorks has released User-Mode Linux for Apple PowerPC G5, claiming it to be the first available to run on PowerPC-based development hosts, giving developers the benefit of processor parity between the development host and the target.

User-Mode Linux (UML) is a kernel patch that enables a virtual instance of Linux running on top of a machine already running Linux. UML allows developers to, among other things, compile and run Linux applications and tasks in an isolated manner from the host environment, thereby keeping the host safe and stable. The new software is based on the 2.6 kernel, and runs atop the company's BlueCat Linux.

"User mode is like a sandbox," said LynuxWorks CEO and chairman Inder Singh, of the benefit of UML. "It's useful for debugging and trying things out, and you can build a target kernel with different configurations and applications. And we run into a lot of people using Macs, so that was the immediate need."

Singh said that a PPC-based version of the tool is particular-

ly useful for embedded developers building applications for high-end defense systems, such as radar, simulation, and flight and weapons control, where the PPC chip is common. "PowerPC is the leading architecture in the embedded world, and UML would be useful because you do a lot of testing and configuration changes." To date, UML has been available only on the x86 platform, and used mainly by enterprise developers, he said.

Although targeting PPC-based designs is certainly possible from x86-development hosts, Singh said doing it from a PPC host not only is more convenient, but also allows the developer to get further along in the development process in advance of target hardware. "You can do your testing of the actual target with hardware and software debuggers. But if you can also do it on your host in a virtual environment, that gives you a lot more flexibility for certain things. It's one more major piece in your toolbox, but by no means the only one."

User-Mode Linux for Apple PowerPC G5 is free, and source code is available under GPL. It can be downloaded now at www.user-mode-linux.org/~jdike/uml-ppc32.tar.bz2. ■

Dilbert: Today I'm An Expert in Silicon

BY EDWARD J. CORREIA

What does it mean when a conference features a comic-strip writer delivering its keynote address? If the witty observations of Scott Adams portrayed through his Dilbert character are any indication, it could mean that at least one speech at this year's Embedded Systems Conference will be more humorous than technical.

The show, taking place March 6-10 at the Moscone Convention Center in San Francisco, is expected to draw about 13,000 attendees, roughly the same as last year, according to organizer CMP Media.

In his keynote, "From Cubicles to Comics," Adams will explain how he fashioned his experiences as a corporate executive into the clever and funny comic strip that so many have come to identify with, and that has elevated him to international status.

The conference, which

unlike last year is not collocated with Europe's electronica hardware show, has still added seven new hardware-centric design seminars, to be presented by editorial staff from CMP's key electronics publications. Topics of the one- and two-day talks include 3G cellular, wireless networking and digital and analog design and other specific end markets. The conference also will feature more than 150 classes in its Embedded Training Program, most of which focus on software development.

Associated with the design seminar is the show's other major keynote: "Software Defined Radio—Business, Market and Social Ramifications," which examines the role of the technology as the industry witnesses the convergence of line/wireless and cellular/WLAN (wireless local area network, aka WiFi) technologies and the emergence of others. The address is to be

Embedded Systems Conference San Francisco

CONFERENCE: March 6-10
Moscone Convention Center, San Francisco

TUTORIALS:
Sunday, 9 a.m.-5:30 p.m.
Monday, 9 a.m.-7 p.m.
Tuesday, 8:30 a.m.-5:30 p.m.
Wednesday, 8:30 a.m.-4:45 p.m.
Thursday, 8:30 a.m.-5:15 p.m.

DESIGN SEMINARS:
Monday, 8:30 a.m.-7 p.m.
Tuesday, 8:30 a.m.-5:30 p.m.
Wednesday, 8:30 a.m.-5:15 p.m.
Thursday, 8:30 a.m.-5:15 p.m.

EXHIBIT HOURS:
Tuesday, 1 p.m.-8 p.m.
Wednesday, 10 a.m.-7 p.m.
Thursday, 9 a.m.-2 p.m.

KEYNOTES:
Tuesday, 12 p.m.-1 p.m., "From Cubicles to Comics," Scott Adams
Wednesday, 3:45 p.m.-4:45 p.m., "Software Defined Radio—Business, Market and Social Ramifications," Stephen Blust and Mark Cummings
www.esconline.com/sf

delivered by Stephen Blust and Mark Cummings, both of the SDR Forum. ■

RTI Narrows Scope, as Wind River's Expands

BY EDWARD J. CORREIA

Wind River Systems will expand its development tools to include more members of the application life-cycle team. With its purchase of the ScopeTools

business unit from middleware developer Real-Time Innovations in January, the company said it will broaden the data visualization and debugging tools to make them useful to

testing, QA and support teams.

The deal, which is valued at about US\$10 million in cash and stock, includes intellectual property and naming rights for all RTI tools for VxWorks and

Linux, including ProfileScope, TraceScope and MemScope, plus around 11 employees. StethoScope and CoverageScope customers may work with either company. RTI will

continue to develop and support StethoScope, its data monitor and debugger for Irix, Solaris and Windows, but will change its name.

"This gives us the opportunity to control the future direction of the tools and where our Workbench development suite is headed," said John Bruggeman, Wind River's chief marketing officer. "ScopeTools will allow us to extend the value of Workbench to other developer types we don't currently serve." He added that the StethoScope data monitor and CoverageScope code coverage tool were particular targets.

While Wind River has been licensing ScopeTools for years and had already integrated them with its Workbench IDE, Bruggeman said that owning them outright would enable them to move the products tangentially. He also claimed that since the two companies shared many customers, disruption would be minimal. "We had been supporting about 90 percent of RTI's customers anyway, so from a customer experience, this is effectively transparent."

But one customer that Wind River had not been supporting was MontaVista Software, which uses ScopeTools as a major portion of its embedded Linux tool chain. "MontaVista is one of the key players in this marketplace; we are happy to extend the relationship," Bruggeman said, adding that negotiations are ongoing. Monta Vista would not confirm that its future strategy includes ScopeTools.

LOWER THE SCOPE

For its part, RTI will use the cash infusion to focus on NDDS, its flagship network data delivery system for embedded and real-time applications. "This gives us money, resources and expertise that we can use to build tools for our middleware," said CEO Stan Schneider.

Wind River had been RTI's largest ScopeTools customer, Schneider said, and added that while divesting the profitable ScopeTools unit will represent a small net loss, RTI has seen demand for NDDS grow sharply. "There is a growing opportunity in real-time networking, [and] we expect to easily eclipse 2004 revenues, even without ScopeTools." RTI's middleware is used widely in military and aerospace, and Schneider said the company will work to broaden adoption into other industries. ■

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More Than A Development Environment

Eclipse defines the market for Java IDEs even as it continues to redefine itself

BY ANDREW BINSTOCK

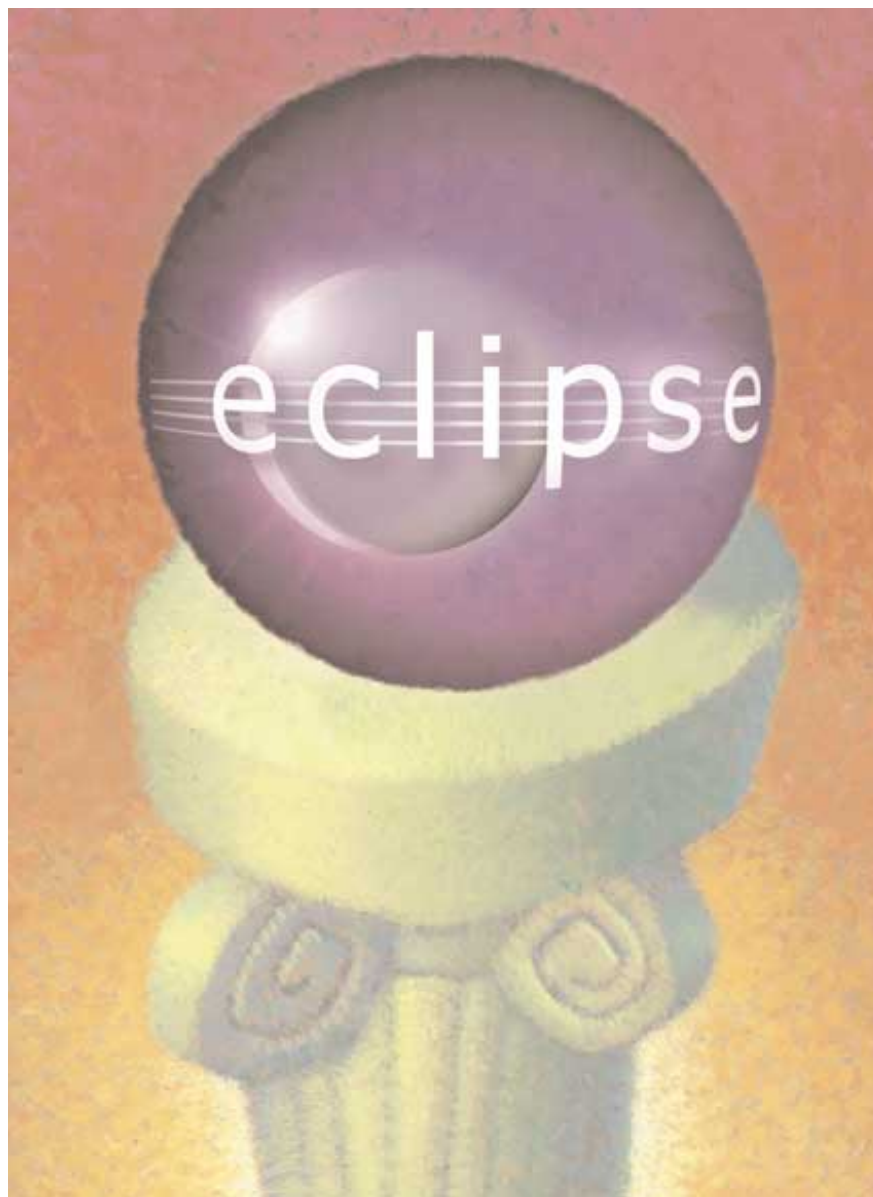
The results of a developer survey conducted late last year by BZ Research—a division of BZ Media, publisher of SD Times—showed that 55 percent of all Java developers use Eclipse as their primary development environment. This surprising market penetration is all the more remarkable because in a similar survey three years ago, half the Java programmers did not use any IDE at all when writing Java applications.

Looking at these numbers, you would have to conclude that IDE adoption among Java developers has jumped because of Eclipse. This view is supported by the enormous interest shown by tools vendors in providing Eclipse 3.0-compatible products. They have begun to make Eclipse the default environment for their tools. As such, Eclipse has grown into an entity far greater and more complex than a Java development platform. And as it spreads into new areas, it continues to redefine itself.

A TOUCH OF HISTORY

As early as 1999, engineers at IBM subsidiary Object Technology International (OTI) were sketching out technologies that would eventually become the core Eclipse platform. OTI, which previously developed many tools in IBM's Visual Age line of programming products, was looking to design a single platform into which IBM could integrate its desktop tools. The first open-source release of the product occurred in 2001, at which time it was squarely positioned as an open-source IDE for Java developers. The Eclipse name, according to many suspicions, was a swipe at Sun, which was then promoting its own Java IDE called NetBeans. The first releases of Eclipse were well received by developers. This was due in part to the use of native widgets, which made the product feel more

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responsive than "Pure Java" competitors such as NetBeans and Borland's JBuilder. In addition, the well-documented APIs for writing plug-ins to Eclipse made it an attractive target for tools developers, especially open-source products. By early 2004, Eclipse was gaining significant momentum. IBM announced it would spin off Eclipse into an independent entity, in the belief that this step would give the technology its best chance at even wider appeal.

As a farewell present of sorts, IBM did a complete rearchitecture of the Eclipse Foundation. The biggest bene-

fit of this revised design—officially called Eclipse 3.0—was to make the IDE even more attractive for third parties writing plug-ins. During the months since the spinoff, Eclipse has received substantial support from the vendor community—so much so, in fact, that Eclipse is becoming an industry unto its own, far transcending its IDE origins. Nonetheless, as the BZ Research poll shows, Eclipse also remains the Java IDE of choice.

ECLIPSE: THE FRAMEWORK

While the early versions of Eclipse were built on OTI and IBM technolo-

gies, the foundation of Eclipse 3.0 comes from an entirely different source: the Open Services Gateway initiative (OSGi). This plug-in architecture was designed by the OSGi consortium for embedded contexts, especially home electronics and automotive. It is used, for example, as the software backplane for the computers in the BMW series 5 sedans.

The requirement that prompted IBM to look for a new framework was Eclipse 2.x's inability to load plug-ins dynamically. This drawback meant that loading a plug-in required stopping and restarting Eclipse every time—a cumbersome process that highly discouraged the use of many plug-ins. Because Eclipse provides most of its functionality through plug-ins, this limitation needed to be resolved. After a long cycle of evaluation, IBM selected OSGi because it was mature and lightweight, and open-source implementations were available. (See oscar.objectweb.org and www.knopflerfish.org for the two leading open-source versions.) But, more important, it enabled dynamic loading of plug-ins.

In rewriting Eclipse 3.0's backplane to the OSGi spec, IBM made sure that Eclipse plug-ins would load and work correctly. It did this by designing a compatibility layer that assured seamless integration. Today, plug-ins from either generation can be loaded and run, and the user does not know the difference. However, the Eclipse 2.x plug-in design is set to be deprecated, so vendors should shift their coding to the specifications for Eclipse 3.0.

The Eclipse designers expected third parties to develop plug-ins using Eclipse as the programming environment. To facilitate this process, the Eclipse team provided the Plug-in Development Environment (PDE), which is freely available at the Eclipse download site (www.eclipse.org/downloads). This PDE provides tools, such as wizards, that automate the process of generating the plug-in interfaces.

The technology most associated with Eclipse today, though, is not the frame-

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More Than a Development Environment

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work but the Standard Widget Toolkit (SWT). This toolkit consists of a set of graphical components that traces its roots back to OTI. SWT works at the low level, while JFace provides the higher-level library. Between them, they provide all the controls and widgets used in Eclipse. In Java, SWT competes with Swing and, to a lesser extent, with Java's own Abstract Window Toolkit

(AWT). The SWT widget list is a subset of the controls found in Swing (for example, SWT cannot display rich text), but SWT has two crucial advantages: It relies on native widgets (so applications have the true look and feel of their platform), and it is simpler to code. Swing is a heavier, more comprehensive toolkit, and it has a fairly long learning curve. Most programming tools (and in fact most products that are not intensely

graphical) will find all the UI components they need in the SWT and JFace combination. These toolkits can be obtained from Eclipse as stand-alone downloads.

ECLIPSE: THE IDE

Eclipse is first a Java development environment. In this regard, it is feature-complete: It has excellent support for coding (incremental syntax checking as you type, numerous refactoring options and so forth), building (automated, integrated Ant builds), testing (built-in JUnit support), debugging and program design.

Currently, Eclipse does not ship with a GUI design tool. Curiously, IBM sold off the GUI tool developed by the SWT team to Instantiations, which sells it under the name of SWT-Designer. However, the Eclipse consortium started up a project called the Eclipse Visual Editor, which provides the framework needed by GUI design tools. A reference implementation, called simply Visual Editor 1.0, was recently released as an Eclipse plug-in in 2004. Meanwhile, various third parties sell plug-ins that offer GUI design functionality.

Even though Eclipse's development was principally focused on Java, IBM

built support for other languages, namely C/C++ and COBOL. Again, third parties are developing support for numerous other languages.

One aspect of Eclipse that makes the environment so appealing is the team's active participation in driving tools projects that dovetail well with the IDE (see sidebar "Tools and Projects From Eclipse"). Eclipse would not have attained its current popularity if its developers did not have strong relations with third-party vendors. Products from these vendors and the projects being developed by Eclipse make the development environment far more than a tool suite; they make it an ecosystem.

ECLIPSE: THE ECOSYSTEM

While useful freeware products, such as Eclipse, are always welcome additions to the developer's toolbox, they take on greater value when they're supported by a large community of vendors. Eclipse, I believe, has the widest third-party support of any development product. Microsoft's Visual Studio .NET would be a somewhat distant second.

A remarkably wide range of vendor tools are available for Eclipse. Some, such as the editor from SlickEdit, are

▶ continued on page 31

TOOLS AND PROJECTS FROM ECLIPSE

In addition to the IDE and plug-in framework, the product is being enhanced by the Eclipse team with these technologies:

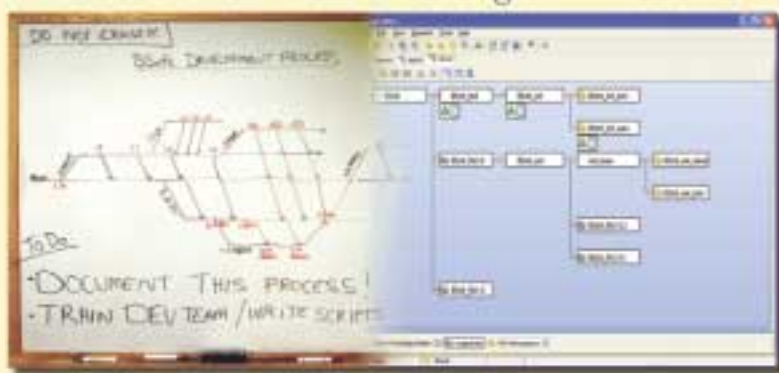
Graphical Editing Framework (GEF) provides the capabilities for rendering graphics (such as diagrams) in Eclipse. The framework uses viewers based on a model-view-controller (MVC) architecture; and it provides various tools for modifying the displayed items through palettes and property sheets.

Hyades is a platform that vendors can use to integrate software-quality tools into Eclipse. Specifically, it provides an extensible framework by which vendors of testing, tracing, profiling and monitoring tools can communicate generated data and operational control to the Eclipse IDE. So, for example, debugging data can be passed in a standard format to the plug-ins for analysis and display.

Eclipse Modeling Framework (EMF) is a means of capturing modeling data and data layouts in an XML format. As a framework, it also provides persistence, a reflective generic object manipulation API, and a change-notification framework. From this, EMF can generate implementations from the models it expresses. It also can be used to define and implement Service Data Objects (SDOs), which are objects and APIs that hide the complexity of J2EE designs and implementations in accordance with JSR 235. —Andrew Binstock

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ECLIPSE

◀ continued from page 30

direct replacements for Eclipse components. Others, such as M7's NitroX, complement the IDE's functionality. But a surprising number, such as ILOG's JRules, use Eclipse purely as a

framework that gives the product a familiar editing environment. Consequently, developer familiarity with Eclipse results in a greater ability to navigate a host of technical tools. In this way, Eclipse is becoming a defining GUI metaphor for technical tools.

The open-source community,

of course, also actively participates in plug-in development. The Eclipse plug-ins site (www.eclipse-plugins.info) lists some 600 plug-ins currently available or under development. As with all collections of open source, the products range from the useful to the silly. The site spares visitors the tedium of

combing through the latter by providing lists of projects with the highest user ratings and the largest numbers of clicks.

Between commercial and open-source freeware, you are likely to find any tool you need within the Eclipse ecosystem. As it continues to expand its presence, I believe it will exert

great pressure on all other IDEs by becoming the default product regardless of platform and programming language. Only Visual Studio .NET is likely to withstand this steamroller. But all other products will need to continuously innovate to stay ahead of Eclipse or convert into plug-ins. ■

MAKING ECLIPSE WORK FOR YOU

If your site chooses to standardize on Eclipse, you'll quickly come to recognize it shares a common failing with many open-source projects: lack of good bundled documentation. And because the Eclipse interface is not entirely intuitive, this documentation is truly needed. You won't extract the real value of the environment by guessing and relying on built-in help. Fortunately, three good books make up much of the lost ground:


"Eclipse Cookbook" (O'Reilly & Associates, US\$44.95). This book is the closest thing to a manual. It lists the various tasks a developer would need to perform, and explains in practical terms how to get them done. It's a hands-on book—every professional Java developer using Eclipse should have a copy.

"Eclipse" (O'Reilly & Associates, US\$44.95). This is the book to use to come up to speed on Eclipse for the first time. It's a very readable introduction with numerous screen shots to facilitate use of all features. It presumes readers already know Java.

"The Java Developer's Guide to Eclipse" (Addison-Wesley, US\$49.99). This massive tome was written by five members of the Eclipse team. It is mostly devoted to explaining SWT and how to write Eclipse plug-ins. This book is best suited for ISVs that are writing plug-ins or extending Eclipse. All other sites are likely to want a single copy as a reference volume.

In all cases, make sure to obtain the latest editions of these books, so that they do cover Eclipse 3.0.

As to SWT and JFace, the best presentation I have seen is **"The Definitive Guide to SWT and JFace"** (Apress, US\$49.99). Lots of code, lots of reference material and lucid prose. —Andrew Binstock



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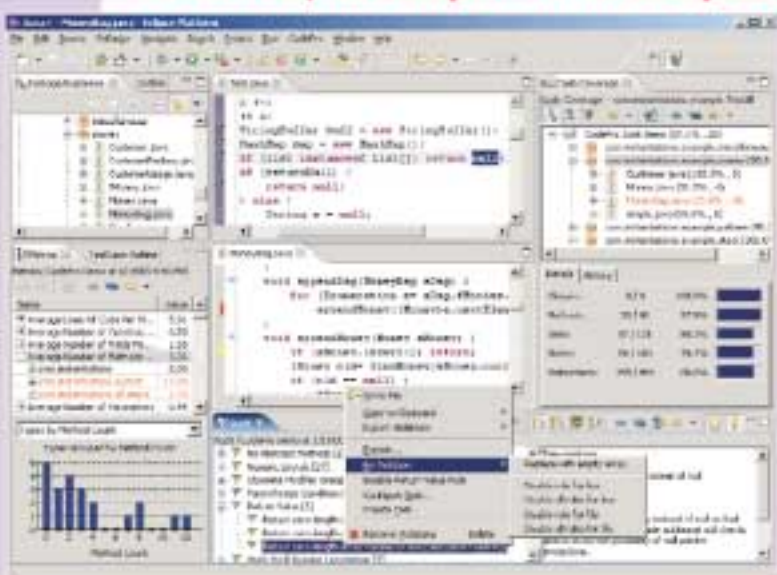
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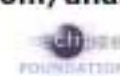
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EDITORIAL

The Payoff for OpenSolaris

Solaris is arguably the most popular commercial version of Unix. However, since its origins as a derivative of the Berkeley Standard Distribution, it has been inexorably linked to Sun's hardware, software and services—just as AIX is tied to IBM systems and HP/UX is a Hewlett-Packard platform.

Yet Sun obviously plans to expand its appeal. After several faltering attempts in the 1990s, it has moved Solaris away from its own SPARC processor, embracing first the 32-bit x86 processors, and most recently, AMD's 64-bit Opteron chips. Those are the same processors more commonly used to run Linux and Windows.

Now, Sun will be releasing the operating system under an open-source license. Why would McNealy & Co. give away Solaris, one of its crown jewels? There are three potential strategic benefits.

First: Attract enterprise Linux customers who might be worried about intellectual property licenses, who want corporate backing behind their server operating systems, or who like some of the high-availability features found in Solaris 10. Now that Solaris has better compatibility with Linux binaries, it could be an attractive option.

Second: Go after Windows customers, who don't necessarily approve of the "design by committee" nature of the Linux community, but who are looking for an operating-system vendor that's less, well, monopolistic than Microsoft, as well as the chance to save some money. If Sun can make a really strong ROI case and gain solid software partnerships, this might work.

Third: Attack HP and IBM's Unix businesses. HP/UX and AIX appeal mainly to legacy customers who buy proprietary hardware systems, and to a large extent, expensive software and professional services. Sun will have to work hard to convince those customers to move off the HP and IBM platforms and onto its own Solaris, especially since much of the software on the IBM and HP midrange systems isn't available on Solaris. Worse, a migration will mean changing hardware. Odds: Poor.

The real payoff for OpenSolaris, however, is hoped to come from sales of Sun hardware and support services. With Sun giving away the operating system, and selling server and desktop apps at a low per-seat cost, it's going to *have* to turn those open-source Solaris seats into significant sales of high-margin server hardware and services. Or go bust.

Windows and Linux shops have decoupled software from hardware, and customers like that. Microsoft and Red Hat aren't trying to push iron on you. Dell isn't trying to sell you an application stack. IBM and Oracle don't care which operating system you use. But with Solaris, there's always going to be that hardware question gumming up the works, and retarding adoption. (Even if you run Solaris on non-Sun x86 boxes, you'll pay Sun for support.)

Ultimately, OpenSolaris adoption depends on whether enterprises will choose to commit to, and become dependent upon, Sun. The open-source license and the new community advisory board do not significantly change that reality. ■

Has Text Processing Improved?

Modern business computing handles complex transactions well. Transactions are, in fact, the primary target of most development today. Consider how many tools discussed in this publication target the transaction-processing cycle: Web services and Web interfaces, business logic for data transformation, databases for the back end. All familiar, well understood and highly efficient. When it comes to transactional data, business computing is extraordinarily capable.

But how about with text? For reasons not wholly clear, companies whose assets are text rather than numeric or tabular data find themselves no better off today than they were years ago. I exaggerate perhaps, as search mechanisms have greatly improved. But, generating text documents, formatting them or extracting value from them is a domain that does not come close to enjoying the agility of transaction-oriented computing.

The central issue from which text suffers is one of standards. Although many standards have been proposed in the past, their defects have limited forward progress. A look at a few of these will illustrate the problem convincingly. SGML, the ISO-approved Standard

Generalized Markup Language that is the father of HTML, was built on the proposition of marking off logical chunks of a document with XML-like syntax. In this way, it was hoped documents could be referenced and even assembled from components.

While this approach is still used at sites where numerous similar documents are produced, SGML never broke out of a niche because of its considerable complexity and because it addressed only content, not format. A follow-up standard, called DSSSL (please, don't ask!) tried to tackle formatting and was the precursor to today's Cascading Style Sheets.

One problem is that many features of text are not easily specified in a style sheet, especially scientific text (to wit, equations). The SGML-cum-style sheet approach morphed into a pure XML approach, called XSL-Formatting Objects (XSL-FO), which specifies all formatting information.

By use of XSLT, the XSL-FO docs can be converted into HTML and PDFs with commonly available tools (such as

the Apache Software Foundation's FOP project). The trouble with embedding detailed formatting data into a document with XML, is that the XML portion hugely dominates the content.

Moreover, everything in the document is maddeningly explicit. Footnotes are a great example: They are explicitly numbered, so if a footnote is removed, the entire XML file must be updated (not likely) or regenerated (highly likely).

As such, the XML-FO spec is not a text standard at all, but a document-formatting interchange standard—once it's written out it can't be changed, only regenerated. And because of its complexity, only programs can generate XML-FO; it is impossible to write by hand.

The complexity of XML, its fragility and its excessive wordiness mean that it makes a very poor standard for encoding text documents. These drawbacks explain, I believe, the general lack of interest in WordML—Microsoft's XML version of Word documents that shipped in Office 2003.

Integration Watch



Andrew Binstock

Letters to the Editor

AN ORTHOGONAL VIEW OF SOFTWARE MONOCULTURES

SD Times published an interesting op-ed by Jeff Duntemann, "The Lessons of Software Monoculture" [Nov. 1, 2004, page 28, or at www.sdtimes.com/opinions/guestview_113.htm]. Here's a somewhat orthogonal view of the same problem.

As Duntemann observed, "Standards are good, and you'll pry C and C++ out of our programmers' cold, dead hands." Plum Hall's studies continue to confirm the basic idea there. Since 2002 we've studied what percentage of Web-circulated job offers are specifying C, or C++, or Java, C#, Visual Basic, etc.

C++ remains top-of-the-charts, with Java and C com-

peting for second place, and the category called "C/C++" is ahead of the remaining categories. (See "Quantifying Popular Programming Languages," Dr. Dobb's Journal, October 2003, page 52.) The managed platforms (Java, CLI aka .NET, C#, C++/CLI, etc.) are growing, relatively and absolutely, but it looks to us that C and C++ (with their pros and cons) will be major players for the time horizon of today's applications and networks.

Duntemann's comments raise challenges for several different competing platforms, e.g., (1) Java, (2) .NET, and (3) Linux platforms alike, because they're all based on a C/C++ foundation.

(1) Regarding Java: One recent CERT alarm described a vulnerability in the plug-in that supports Java apps in a browser. The flaw is not in any Java code; the flawed code is the C-level foundation that supports the execution of Java code.

(2) Regarding .NET: New apps in .NET tend to be managed code (C#, VB.NET or C++/CLI), but the huge foundation of unmanaged C/C++ still remains.

(3) Regarding Linux: Some groups want to build a Java layer over Linux, others are building a .NET ("CLI") layer over Linux, but fundamentally Linux is a C-level API. If all the Linux source code, all the

Even though Redmond provided detailed documentation on the layout of WordML, very few utilities leverage it. This lack of interest exists side by side with constant pressure on Microsoft to document its .doc file format.

XML likewise hurts DocBook, a project with origins in the Unix community that uses XML and attendant Document Type Definitions (DTDs) to describe both content and format of documents. DocBook is amazingly complex. In recognition of this, there is now a "simplified DocBook" standard. But my belief is that, like XSL-FO, XML forces DocBook to be nothing more than a document interchange format. It is not the natural format for text because, again, it contains way too much detailed formatting information.

So, if you need to generate text documents with an eye toward converting them to printed form or HTML and PDF files later on, what do you do?

Fortunately, there is a solution. Moreover, this solution provides both structure and formatting markup without hard-coding everything—it lets the rendering engine figure out the current number for pages, footnotes, illustrations and so forth. In addition, the markup for this solution can be embedded by hand at the time of composition, because it's

simple and does not rely on wordy hierarchical specifiers like XML.

Donald Knuth attacked this problem in the late 1970s and came up with a brilliant solution: TeX, a typesetting system that established default behaviors for the rendering device (that could all be overwritten) so that the document contained far less hard-coded formatting data. He also provided a crucial feature: macros. What would take pages of XML code required only a single command in TeX. Most work with

TeX today is done using LaTeX, which is a high-level collection of these macros originally written by Leslie Lamport in 1984. LaTeX and TeX are themselves free; learn more at www.latex-project.org and www.tug.org.

The success of LaTeX is evident in the huge, active community that uses it and the astounding number of packages and tools that work with it. Beyond that, its ability to render complex text and graphics in numerous formats (such as PDF, HTML and XML) make

it a universal tool. However, it requires a long learning curve. Jeffrey Kingston's work on lout provides a TeX-like subset that's easier to learn. He is now designing an expanded model, called nonpareil, that improves on lout and TeX. It's years from release, but it could well move the ball forward on a problem that computing in general has done surprisingly little to resolve.

Andrew Binstock is the principal analyst at Pacific Data Works LLC.

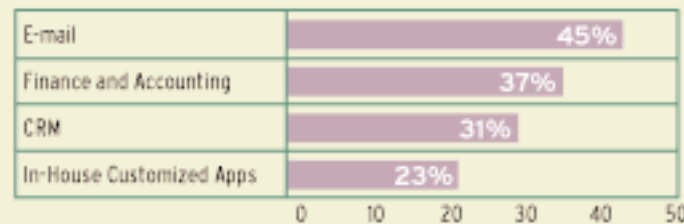
Are Your Company's Homegrown Applications Important?

The answer may be surprising. According to "Software Drain or Business Gain: Assessing Application Value, Relevance and Cost to Your Company," a report published in December 2004 by the Business Process Management Forum, less than a quarter of respondents selected their in-house customized applications among the top three most important business-critical applications.

The study polled 226 C-level executives and IT staff, of which about a quarter work for companies with more than US\$500 million in annual revenues; the remainder had less income. BPM Forum is an industry consortium that advances the understanding of BPM techniques and technologies.

Respondents also were asked what three factors they used to rank the importance of their business applications. More than two-thirds included "essential to business operation" as a factor, and nearly as many said "boosts productivity and efficiency." Slightly more than half thought the most important applications "create a competitive capability or advantage." Importance notwithstanding, about half of respondents rated the quality and reliability of the tools they use as adequate, low or very low.

What Are Your Three Most Business-Critical Applications?



Source: Business Process Management Forum
www.bpmforum.org

Linux drivers and tool sets, and all the apps in a specific vertical were provably free from buffer overflows, null-pointer attacks and other similar vulnerabilities, then at that point Linux would be a more provably secure foundation platform than Java or .NET.

Duntemann called for innovation at a foundation level: "Ducking the unavoidable effects of software monoculture really means going back to the drawing board and managing the communications that make one app's problem everybody's problem. ... The real answer may not have been invented yet—but if we keep looking in the wrong places, or blaming the wrong people (Microsoft or anybody else), the black hats will keep on lighting fires, and the networked world will continue to burn."

My opinion is that C and C++ are the places where innovation can be most effective. One ongoing example is the Secure C Library being developed by the committees that work on the international standard for C (including ISO/IEC JTC1/SC22/WG14 and corresponding national committees like the USA's J11 committee).

The Secure C Library proposal was submitted to the C committee by Martyn Lovell of Microsoft. Quoting from the report: "This technical report provides alternative functions for the C library that promote safer, more secure programming. The functions verify that output buffers are large enough for the intended result and return a failure indicator if they are not. Data is never written past the end of an array. All string results are null terminated." In general, the new "secure" version

of each function gets a name ending in "_s"; for example, `getenv` is supplanted by `getenv_s`.

The Secure C Library is not attempting to do away with null-terminated strings entirely, but instead to ensure that every array-of-char returned from, or produced by, the standard C library really is null terminated, and that array bounds are scrupulously observed.

Other projects are taking the basic concept behind the Secure C Library and extending it to the compiler and the linker: Every fetch-or-store operation upon an array or a pointer requires adequate bounds-and-type information in the calling sequence, or available to the compiler or linker, to ensure that undefined behaviors do not take place, particularly buffer overflow, null-pointer indirection, etc.

This requires a combination of techniques, including static analysis, a few changes in code generation, extra checking at link time, and a surprisingly small amount of runtime checking.

For information on the Secure C Library, see the latest draft at www.open-std.org/JTC1/SC22/WG14/www/docs/n1088.pdf.

Tom Plum

Editor's note: Tom Plum, co-founder of Plum Hall, has been active in C++ standards since 1983; the company offers compiler validation suites for C, C++ and Java.

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SDTimes

Software Development Times
February 15, 2005 - Issue No. 120

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Searching for Strings

One of the whiteboard questions asked by Microsoft of potential interns is: "How would you write a program to evaluate simple mathematical strings like $2+(3*4)/5$?" I wonder if my first response—"Google for 'BNF calc c#'"—would get me hired or fired. Just as premature optimization is a route to evil, so too is writing code that you don't need to. With the prevalence of blog entries casually pointing out traps and solutions, the increasing "long tail" of programming content, and the likelihood that you're not the first to be stymied by a programming problem, the browser should be the first stop on any programming journey.

It's a cliché in the programming world that laziness is one of the marks of a good programmer. Laziness, in this context, means a preference for finding a library call or sequence of calls to descending into the chaos of sorting out whether you need to loop with a `do...while()` or a `while...do()`. This used to involve picking up a cup of coffee on a walk to the reference library, having another cup while flipping through back issues of Dr. Dobbs, and then buying some time with The Really Smart Guy by taking him over to the espresso stand. Then, wired up with all that caffeine,

producing the solution with an all-night coding session.

Lazy, lazy, lazy.

While replacing the old habits with an Internet search is both faster and easier on your adrenal glands, it does have disadvantages. At Microsoft, in particular, one can imagine both cultural and legal objections to the cutting and pasting of even a few lines of code. More generally, code snippets found online are biased toward proprietary, home-grown or obscure tools. This is because such tools are most likely to generate blogs and wikis and message board posts filled with the keywords, even if the context is "Gee, why does this tool make it hard to do X?"

This dynamic of a surprisingly incomplete tool being written about disproportionately and thus ironically gaining credibility is an important part of the software development tool industry. Heck, I fell victim to this myself at the beginning of the column, since "Use or embed a language with an `eval()` function" might be an even more admirably lazy way to solve the problem.

The development of HTML into a pix-

el-precise layout language and the continued investment in misery that is the browser-based client UI are equally striking examples of baroque evolution. The succession of programming language popularity, especially the sweeping embrace of C++ in the late 1980s and early 1990s, is another example of a feedback cycle of confusion, training resources (books, magazines, conferences, etc.) and popularity.

With endless terabytes being continuously indexed by the search engines, the Web eliminates bookshelf space as a constraint on resources, so get 50 of your friends to blog about your obscure library and you've got yourself a piece of the pie. On one hand, since the confusion-query-response feedback cycle is even faster and easier on the Web, actively supported libraries, tools and components will emerge in a chaotic, faddish manner.

On the other hand, as the probability increases that even the most obscure and technical query matches some Web post somewhere, developers will always find an answer on the Web, whether the quality of that answer is high or low. In the fast-moving world of technology, the Web

already contains millions of pages of advice and guidance on the use of now-deprecated APIs and abandoned projects. There's been a great deal of talk lately about the riches of the long tail (www.wired.com/wired/archive/12.10/tail.html), but the shallow end of the bit-stream contains plenty of fool's gold.

Even if using someone else's tool or library is an absolute impossibility (whether because you're being asked to write on a whiteboard or because of other constraints on the project's context), there's almost always value to be found in that initial query. In the case of the math evaluator, you might get a grammar sufficient to the task or you might get a quick reminder that you'll need different rules for operators of different precedence. In the case of APIs, just in the past six months I've discovered undocumented constants, resource leaks and "It's not your code, that function fails silently."

A programmer candidate proposing to Google the very question asked? I might frown. Proposing to Google keywords and concepts implicit in the question? That's not a bad first step. But here's a thought: If interviewing at Microsoft, don't talk of "Googling" for the answer; speak of "search.msn.com for 'BNF calc c#'." ■

Larry O'Brien is a technology consultant, analyst and writer. Read his blog at www.knowing.net.

Windows & .NET Watch



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Tools That Work Against You

The tools you use control the way you work, but some tools work against you. A bad tool encourages you to work counterproductively. Unfortunately, every OO-Design/UML-case tool that I've ever used falls into the you're-better-off-without-it category.

This thought was triggered by the newly released MagicDraw 9.0 from No Magic. MagicDraw actually compares favorably to most of the competition. Nonetheless, none of these tools—including MagicDraw—help with the OO process enough to justify their cost. My comments apply to all the OO CASE tools I've looked at, not just MagicDraw.

Let's start with the features. Many CASE-tool features are so poorly conceived that you wonder whether anyone at the company actually does OO Design. Consider the "design-pattern library," which lets you paste the static structure of one of the examples in the Gang-of-Four (GoF) book into your diagram.

Patterns don't work that way, however. The static structure of a given pattern varies considerably from program to program. The example in the GoF is just one possibility. Moreover, a single class can simultaneously participate in half a dozen (or more) patterns; you can't "paste" a pattern structure in isolation because some of

that structure may already exist.

"Round-trip engineering" is another flawed mechanism. It's useful to import an existing piece of legacy code into a CASE tool so that you can see its structure. The resulting picture is not a design, though. In round-trip engineering, the tool generates some small percentage of the code for you. You then hack up this generated code, and at some future date, reimport it into the tool, which reconstructs some (though not all) of the diagrams that constitute the design. What you've really done is thrown away your design and replaced it with a picture of hacked-up code.

The reverse-engineering process also fails miserably with the dynamic model. UML "interaction diagrams" show you how a set of objects interact at runtime when modeling some scenario of some use case. The messages on a diagram are limited to those messages that are relevant to that scenario. MagicDraw imports the entire method into the diagram, so the use cases are all jumbled together into a single diagram. The resulting picture is nothing but a UML version of a flow chart.

A good tool must also transparently reflect your workflow. Most experienced designers understand that the dynamic model (the objects and messages they send) tends to drive the design process. Most of the class diagram, for example, can be inferred from the interaction diagrams.

If one object sends a message to another, there's a relationship between the associated classes and an operation in the receiving class. If a message isn't used in the dynamic model, it has no business on the class diagram. A good tool should automatically add operations to classes when you add the message to an interaction

diagram, and the process should be automatic. No dialog boxes, no dragging and dropping—the new message should just appear in the class box.

Similarly, a good tool should do the equivalent of compiler syntax checking, flagging unused messages as errors, for example. Working from the dynamic model in MagicDraw, however, is like having a root canal. It takes two dialog boxes and way too many mouse clicks to get a new message to appear in the static model. Some tools do a better job of

keeping the static and dynamic models in sync, but no tool that I know of checks the design for internal consistency. By making this process difficult, the tool is subtly forcing me to work in an incorrect static-model-drives-the-process way.

The final (and fatal) flaw in these tools is exactly the dialog-box hell I just described. A UML diagram is first and foremost a diagram. Any tool that's harder to use than a pencil and paper is seriously flawed. I want to add a label to the end of a line by putting the cursor where I want it, clicking and typing the label. I want to type "role:class" in a sequence diagram and the tool should figure out that this is an object named "role," which is an instance of the specified class.

I never want to obscure the diagram with complicated dialog boxes, full or drop-down menus and abstruse icons that force me to manually tell the tool something that it should be able to infer. Any inexpensive drawing program does a better job than the megabuck CASE tools in this department.

So, for now, I'm back to pencil, paper and a simple drawing program. I still want these tools to work for me, but I won't be happy until I can use a tool to put a design together in less time than it would take to do the same thing on a whiteboard. ■

Allen Holub is an architect, consultant and instructor in C/C++, Java and OO Design. Reach him at www.holub.com.

Java Watch



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Serve Your Process

You can't run a \$75 million business on e-mail alone.

This is the lesson learned by Drew Schwartz, the director of operations at Ellery Homestyles, a New York City-based producer of custom soft home furnishings, such as curtains, pillows and throws.

"We have a showroom full of unique items that are custom designed," he said.

"We have 90 to 120 days to put [an item] into production from scratch after a sale." The goods are manufactured overseas, in China, Turkey, India and Pakistan, and sold here through Wal-Mart, J.C. Penney, Target, Sears and Bed Bath & Beyond. "What we needed was to coordinate the workflow of communication from overseas, to manage a number of programs at once and to keep track of progress."

E-mail, Schwartz said, allowed managers to make requests of the manufacturers, but there was no automated way to validate they received the request. And, if they did receive the request and were working for a week and a half toward fulfilling the request, Schwartz said there was no automated way to follow the advancement of the job. "From a business standpoint, the key issue we struggled with was making sure we were getting the work done on time."

The company addressed its problems by purchasing and installing a business

process management solution. "BPM pushes people along," he said. "It mirrors how our customers want things done. Each customer, each program is different. We have a stable process flow for each custom program that's flexible but provides rigidity." It also provides Ellery with quality control and accountability. If someone in the supply chain skips a fabric inspection, for example, it could be that after the goods are produced, the fabric won't hold up. The costs in terms of time, and perhaps a lost account, are great.

The key to implementing a business process management solution, Schwartz said, was choosing one that did not impose a process but rather helped facilitate the one Ellery already had in place. "That was a great concern we had," he said. "We didn't want to be forced to conform to their 'best-of-breed' process. That was too much for us. We needed a system that would let us move seamlessly, with people doing the same work but within a different mechanism." That also helps with employee buy-in to this type of system, he added. "It removes a barrier to implementation."

Moving to a business process management system resulted in more issues about training workers to use the system than there were about implementing the technology, he said. Ellery runs 40 to 50 Microsoft Small

Industry Watch



David Rubinstein

Business Servers for Internet access, messaging and collaboration, as well as IBM iSeries servers on the back end to handle transactions.

The business process management system enabled Ellery to gain consistency and repetition of process, which allowed the company to simplify, automate and gain control over the workflow. "This is where BPM really can succeed the best," Schwartz said.

The payoff, he said, "has been incredible. From an executive standpoint, it's easier to roll out responsibilities with an audit trail of execution, and we've been able to develop a product development process that's in place for every product in our system."

Another key benefit of utilizing this type of system, he acknowledged, is that it forced the company to do a complete review of its processes and workflows before implementing the BPM solution. "That helped identify where the breaks in the chain are, and where the weaknesses in the process are." This business analysis helps provide understanding into how the business should be operating.

Whether the product is home furnishings, airplanes or software, the need to establish controls over the quality and timeliness of the work has never been greater. Compound that with regulatory compliance issues that require companies to prove they're following sound processes, and it's clear that the use of e-mail alone just isn't enough to run a business. ■

David Rubinstein is editor of SD Times.

BUSINESS BRIEFS

GREEN HILLS FILES SUIT AGAINST WIND RIVER

Claiming that Wind River is reneging on a 99-year cooperative agreement, Green Hills Software last month filed an antitrust lawsuit that alleges Wind River is trying to monopolize the development tools market for its VxWorks operating system.

The companies had worked together for 10 years to provide their joint customers with Green Hills embedded development tools and Wind River's VxWorks operating system, including the U.S. military. Green Hills claims that Wind River has failed to supply it with the VxWorks updates necessary to keep its tools current.

The Green Hills suit, filed in U.S. District Court for the Central District of California, claims Wind River has engaged in illegal activities to drive Green Hills out of the market of supplying development environments for the VxWorks operating system.

The company claims Wind River has lied to its customers by saying that Green Hills has stopped supporting the MULTI and AdaMULTI development tools for VxWorks, and that Wind River has falsely advertised that its own Workbench 2.0 IDE is "the first and only cross-platform IDE to support VxWorks, Linux and other in-house operating systems." Green Hills claims MULTI is the leading cross-platform IDE with support for those systems.

Further, Green Hills CEO Dan O'Dowd said that Wind River has named its new debugger Multi-X. "How long would it take General Mills to sue someone who dared to introduce a new breakfast cereal named Wheaties-X?" O'Dowd said in a statement.

Wind River sued Green Hills in June of last year claiming Green Hills breached the cooperative agreement by becoming a direct competitor. That suit was filed in Alameda County, Calif., Superior Court. "There has been a long-standing agreement between the companies, about 10 years," said John Bruggeman, Wind River's chief marketing officer. "We believe they did not meet the terms of the agreement [last] summer and we took legal action to terminate that relationship."

Wind River had sued Green Hills at least once before, in 2002, claiming patent infringement by Green Hills in the development of the MULTI IDE products, but Wind River withdrew the suit without accommodation from Green Hills.

As for Multi-X, Bruggeman said, "That [claim] was surprising to me. We don't sell a debugger, we sell a development environment and it's called Workbench; we don't have a product called Multi-X. I run the product group, and I don't know anything about that product." —David Rubinstein and Edward J. Correia

Application simulation software and services company iRise has secured US\$15.8 million in funding, led by Morgan Stanley Venture Partners, the first institutional investor to finance the company. Since 2001, the company has raised more than \$28 million, mostly through private investors. iRise software addresses the communication gap between business and IT created by poorly defined applications. The company's application simulation platform enables businesses to replace text as a means of defining complex systems requirements with visual simulations that allow them to give application definitions a test run before costly and time-consuming coding takes place.

... Microsoft reported record revenue of US\$10.82 billion for the second fiscal quarter ended Dec. 31, 2004. Net income for the quarter was \$3.46 million, or 32 cents per share. The company's server and tools business grew 18 percent in the quarter, while its home and entertainment division—led by Xbox and Xbox Live—delivered its first profitable quarter.

EARNINGS: Compuware reported revenue of US\$330.5 million for the third quarter of fiscal 2005, with net income of \$41.7 million. Revenue was \$12.3 million higher than for the same period in fiscal 2004, while net income increased by \$19.9 million from the year-ago quarter. "This is more like it," said Compuware chairman Peter Karmanos Jr. in a statement. ■



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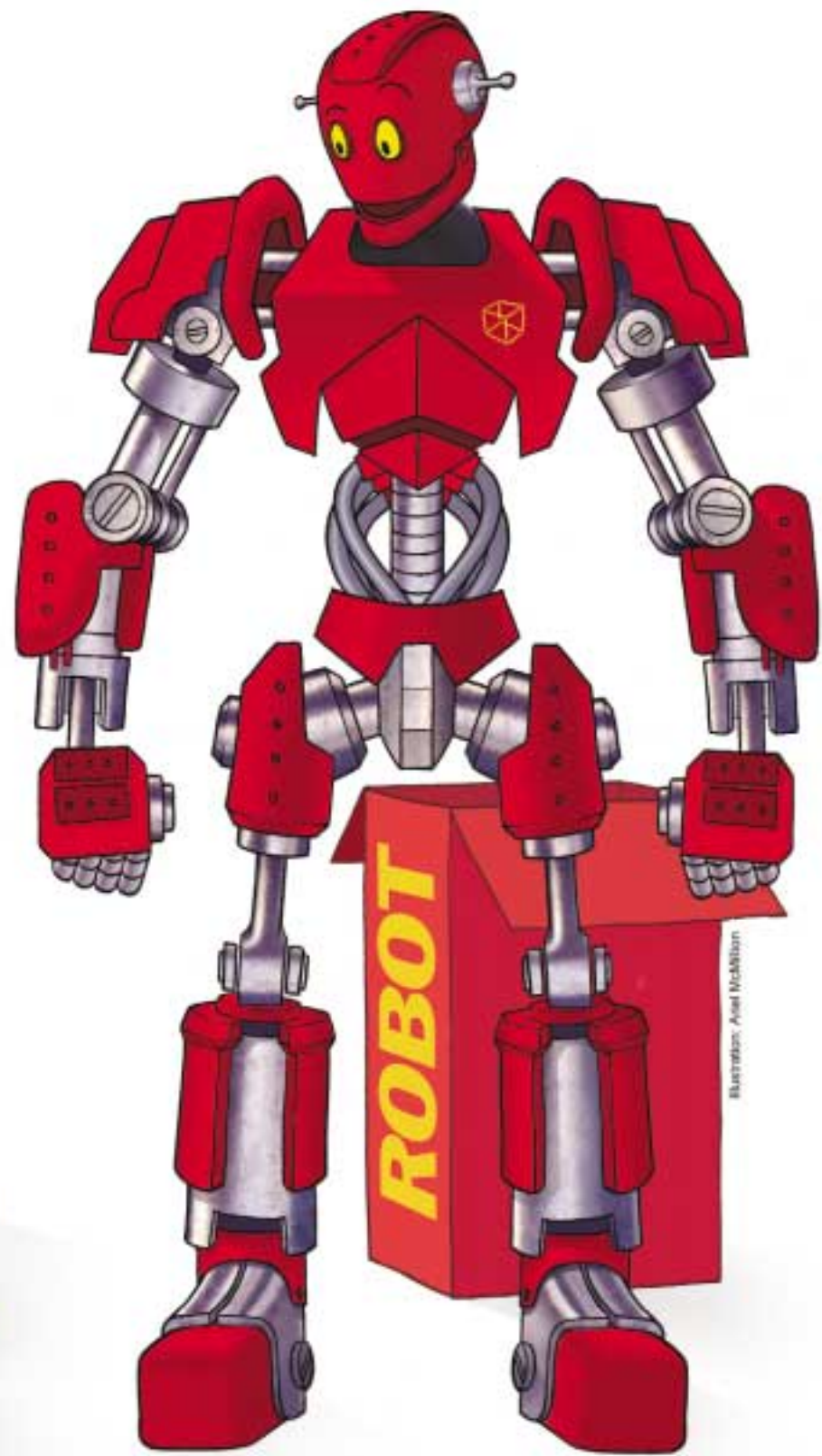
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